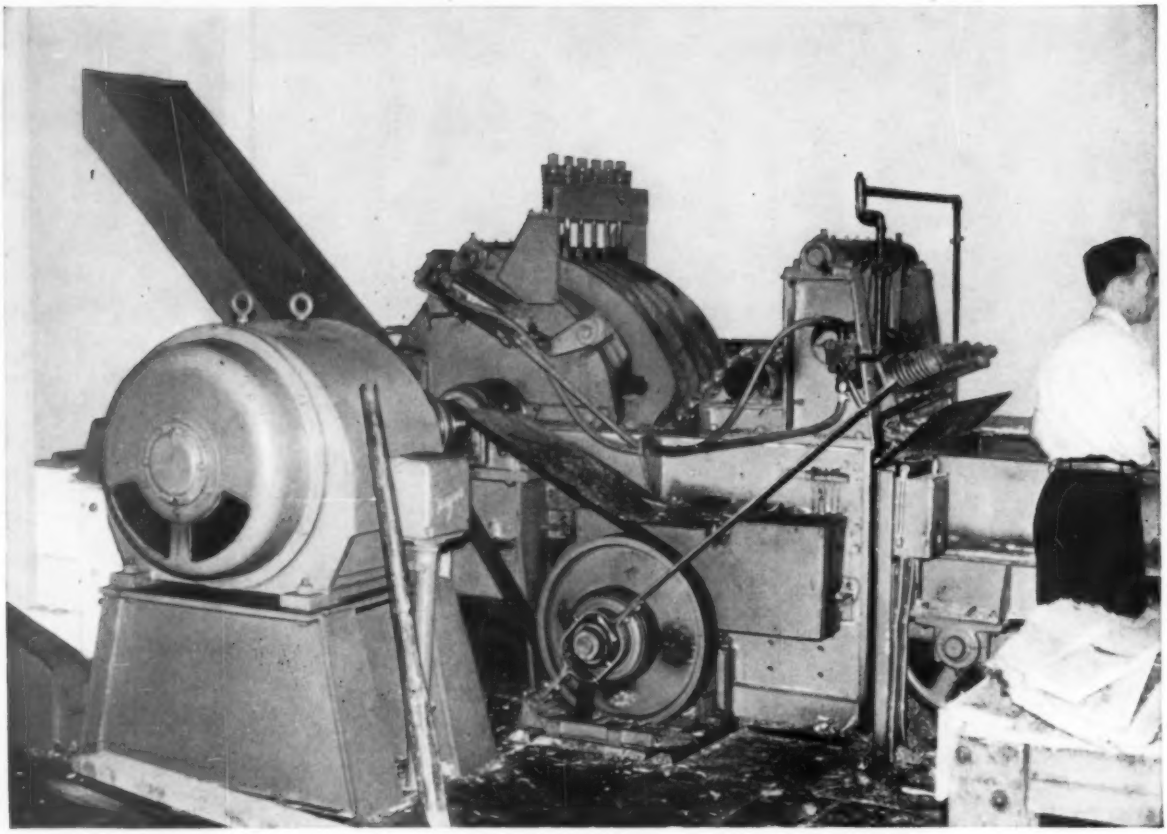
JULY, 1959

THE Lumberman

LUMBER PLYWOOD BOARD WOOD MANUFACTURING

ANNUAL BOARD REVIEW

1959 EDITION



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JULY, 1959

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THE Lumberman

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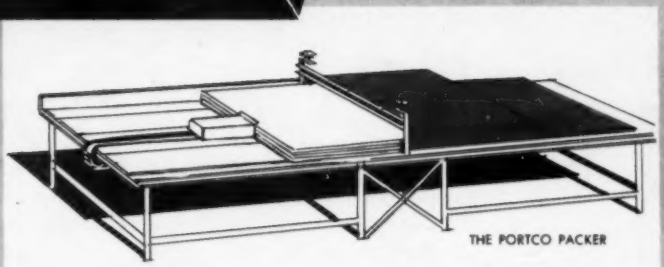

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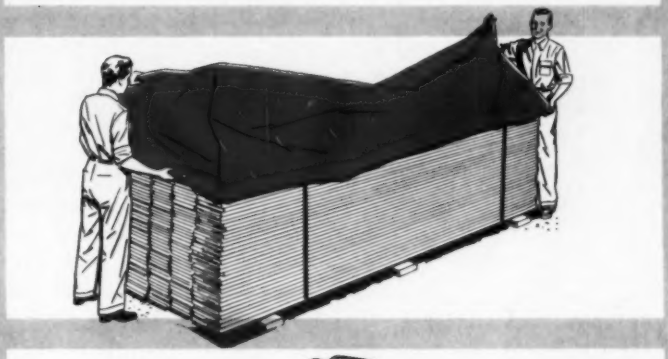

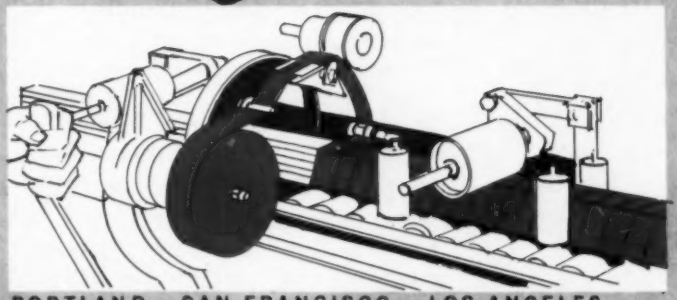

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significant industry news

General Outlook . . .

NLMA ESTABLISHES GOVERNMENT RELATIONS GROUP . . . John D. Bronson, Yakima Wash., heads a new committee established by NLMA to deal with national affairs and legislation affecting the lumber industry. Committee members, to be named later, will be from leading manufacturers throughout the country. At its annual spring meeting the NLMA also established an economic council of the lumber industry which will meet annually to consider the long range problems of forest and lumber manufacturers and to make recommendations to the board as to industry plans, programs and activities deemed desirable. The board of the NLMA proposed a cooperative program of merchandising and promotion involving the national association and officials of the National Retail Lumber Dealer Association designed to enlist cooperation of the trade groups in the National Wood Promotion Program.

FIR PLYWOOD OPERATORS OPTIMISTIC . . . A slowdown of sales in the third quarter followed by improvement in the last quarter and the first two quarters of 1960 are expected in fir plywood, it was reported at the annual meeting of the Douglas Fir Plywood Association held at Gearhart, Ore., in June. Output is expected to top 7.5 billion square feet in 1959, 8 billion square feet in 1960. It was reported at the meeting that warehousing distributors have a maximum ability to absorb and have on the floor at any one time 1 billion square feet of plywood. Production at a rate in excess of this will soften the price. New officers of the group include C. H. Bacon, Jr., Simpson Timber Co., Seattle, president, and John Martinson, Puget Sound Plywood, Inc., Tacoma, Wash., vice-president.

FIR PLYWOOD OUTPUT CURBED . . . Major plywood producers in the west early in June started curbing production of fir plywood in the face of slowed up orders and high inventories at the jobber and dealer levels. Generally, the producers reduced production about 20%. The slowdown in some instances was planned until the end of June, others through the July 4 holidays. The index price was still being quoted at $85 although some sales were being discounted $5.

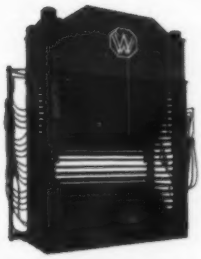
B. C. SEES NORMAL PLYWOOD ACTIVITY . . . British Columbia's fir plywood industry will continue to operate at normal capacity during the next few months, according to executives of MacMillan & Bloedel, British Columbia Forest Products and Western Plywood Co. Summer vacations will curtail production some. John Bene, president of Western Plywood, expects a gradual falling off of sales late in the fall. The market justifies operation at current rate, according to Ralph M. Shaw, president of MacMillan & Bloedel.

INSTALLMENT SALES PACKAGE OFFERED . . . A new plan is available from Standard Financial Corp., New York City, which enables lumber equipment manufacturers to set up a full program for installment sales of their income-producing equipment, obtain complete financing and have the financing company handle all customer credit, collection and paper work at no extra charge. The financing company will furnish manufacturers with contracts, credit applications and notes, will check customers credit anywhere in the country within three days. Equipment purchasers would be required to make only a down payment of 15% in cash or trade, the balance payable in 1-5 years. Standard will advance to the manufacturer 90 to 100% of the gross amount of the customer's installment note, minus the minimal finance charge.

More INDUSTRY NEWS on page 14

the measure of Performance Reliability for more than a century

WILLIAMS-WHITE Hot Plate Presses



Production capacity per dollar invested. Minimum downtime. Low maintenance costs. Economical operation. These are the factors that add up to performance reliability. And these are the reasons *more Douglas fir plywood has been made on Williams-White presses than on any other kind.* For a complete review of the elements that combine to make a performance-reliable hot plate press for plywood or particle board production, write for Bulletin No. 200-A.

106th year

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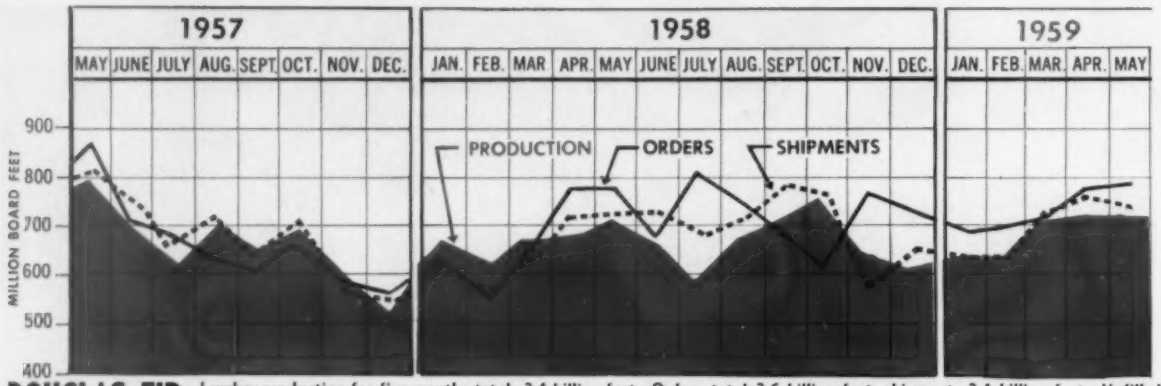
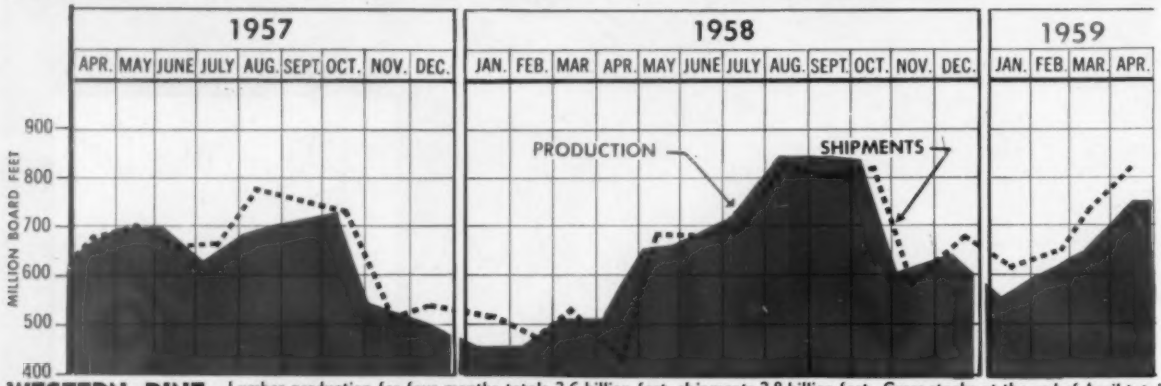
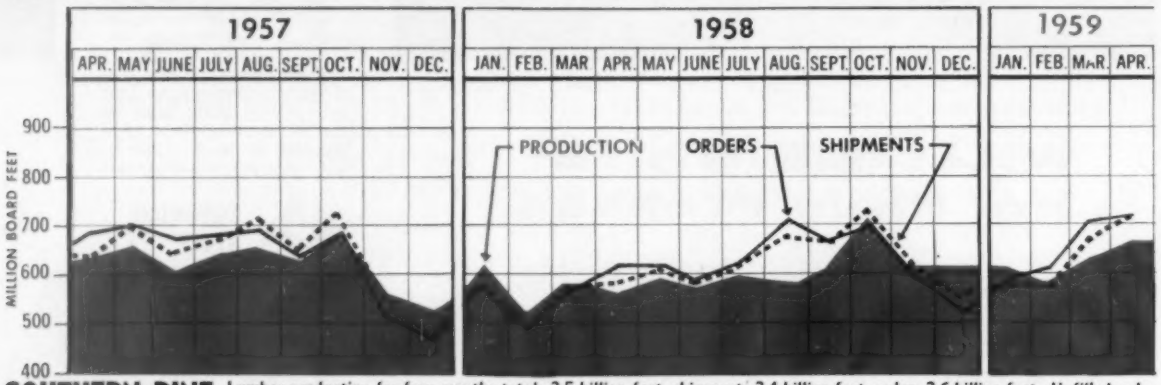
INDUSTRY TRENDS *(See more TRENDS on page 120)*



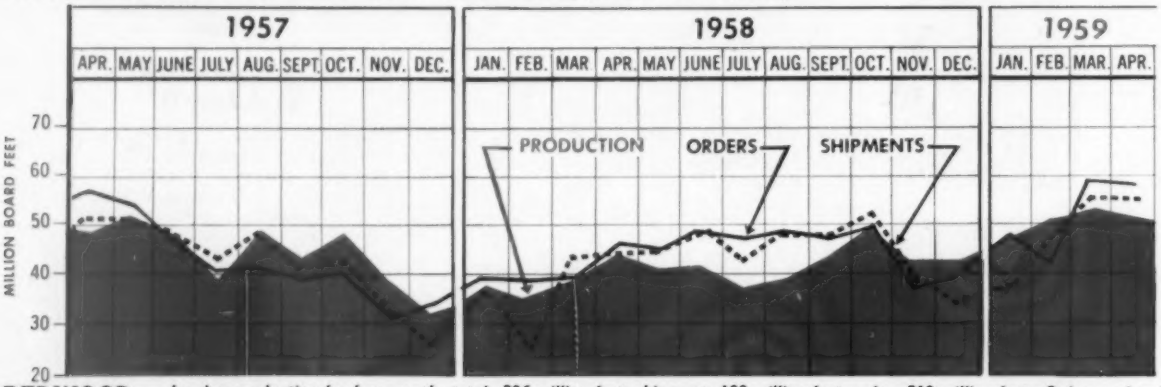
DOUGLAS FIR Lumber production for five months totals 3.4 billion feet. Orders total 3.6 billion feet, shipments 3.4 billion feet. Unfilled orders at the end of May totaled 735 million feet. Inventory at the end of April was 858 million feet.



WESTERN PINE Lumber production for four months totals 2.6 billion feet, shipments 2.8 billion feet. Gross stocks at the end of April total 1.8 billion feet. Production is up 21% over a year ago, shipments are up 24%, stocks are down 6%.



SOUTHERN PINE Lumber production for four months totals 2.5 billion feet, shipments 2.4 billion feet, orders 2.6 billion feet. Unfilled orders of 255 million feet are 3% above a month ago, 39% ahead of a year ago.



REDWOOD Lumber production for four months totals 206 million feet, shipments 188 million feet, orders 210 million feet. Orders on hand total 81 million feet vs. 59 million feet a year ago. Stocks of 379 million feet compare with 401 million feet a year ago.

STANDARD ENGINEER'S FIELD REPORT

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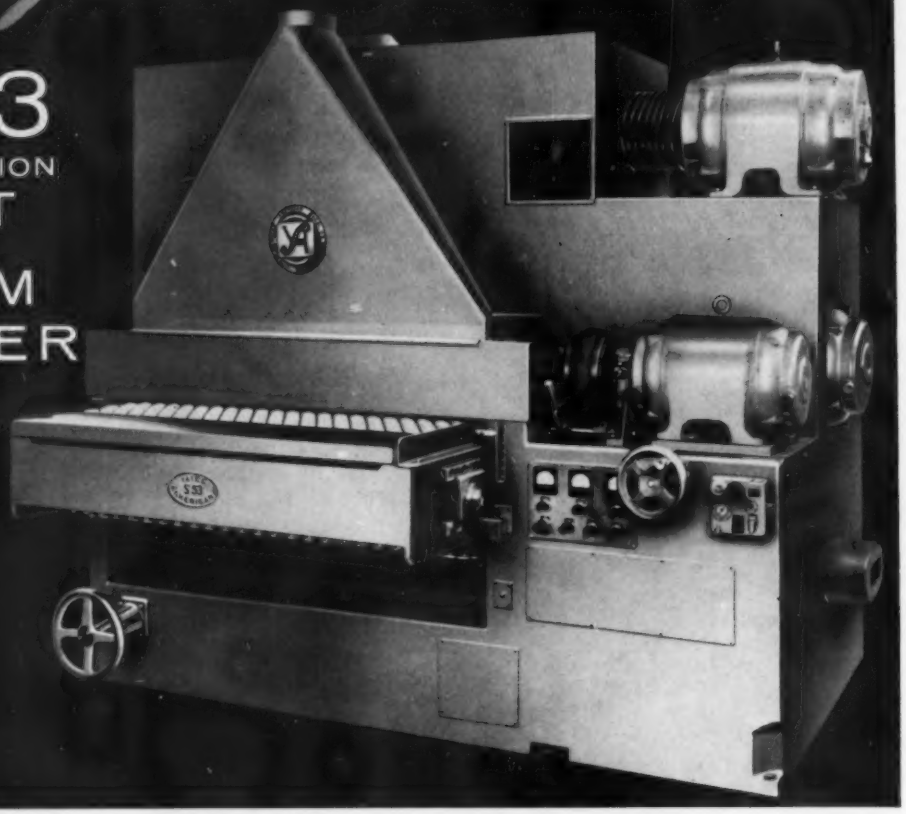

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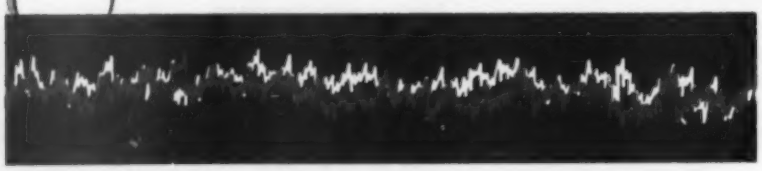

Accu Ray chart on which continuous electronic measurement of glue application to API Veneer Tape is recorded.

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Industry Meetings

JULY

Philippine Mahogany Association, July 12-16, Ojai Valley Inn, Ojai, Calif.

Forestry Conservation Communication Association, 10th annual, July 15-17, Arlington Hotel, Hot Springs, Ark.

Western Wooden Box Association, summer meeting, July 23-24, Reno, Nev.

Appalachian Hardwood Manufacturers, Inc., July 27-28, Greenbriar Hotel, White Sulphur Springs, W. Va.

AUGUST

National Woodwork Manufacturers Association, softwood division, August 4-6, Hotel Leamington, Minneapolis, Minn.

SEPTEMBER

Louisiana Forestry Association, September 10-11, Alexandria, La.

Wood Industries Conference, September 10-12, Multnomah Hotel, Portland, Ore., sponsored by American Society of Mechanical Engineers, American Institute of Chemical Engineers and Forest Products Research Society.

Concatenated Order of Hoo Hoo, September 13-16, Duluth Hotel, Duluth, Minn.

Lake States Logging Congress, September 17-19, Iron Mountain, Wis.

Western Pine Association, semi-annual, September 23-25, Multnomah Hotel, Portland, Ore.

Northwest Hardwood Association, annual meeting, September 25-26, Monticello Hotel, Longview, Wash.

OCTOBER

National Hardwood Lumber Association, October 6-8, Queen Elizabeth Hotel, Montreal, Canada.

50th Anniversary, University of Idaho school of forestry, October 22-24, Moscow, Idaho.

NOVEMBER

Hardboard association, fall meeting, November 5-6, Chicago, Ill.

Pacific Logging Congress, November 11-15, Civic Auditorium, Seattle, Wash.

National Association of Lumber Manufacturers, annual meeting, November 12-14, Washington, D. C.

Society of American Foresters, annual meeting, November 15-18, San Francisco, Calif.

DECEMBER

Red Cedar Shingle Bureau, December 4, Olympic Hotel, Seattle, Wash.

National Oak Flooring Manufacturers Association, annual membership meeting, December 9-10, Hotel Peabody, Memphis, Tenn.

Western Forestry & Conservation Association, December 9-11, Spokane, Wash.

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Stauffer's West Coast manufacturing plants assure prompt, dependable service for users of Alum throughout the West.

An experienced staff of Stauffer technicians stands ready to help you with any chemical problem.

Stauffer Alums:

LIQUID ALUM
Available for immediate delivery from Tacoma, North Portland and Richmond.

DRY ALUM
Available for immediate delivery from Richmond, California

Other Stauffer Products:

FERRIC SULFATE
Available for immediate delivery from Richmond, California

SULFURIC ACID
Available for immediate delivery from Tacoma and Richmond.

For further information or data on these and other Stauffer chemicals, write or contact your nearest Stauffer sales office shown below.

Stauffer CHEMICALS SINCE 1885

STAUFFER CHEMICAL COMPANY
636 California St., San Francisco, Calif.
Box 68, North Portland, Ore. • 824 Wilshire Blvd., Los Angeles, Calif.

GAINS EXPECTED IN FIBERBOARD SALES... Sharp upswings in sales of perforated and decorative fiberboard ceiling tiles and a home market potential one-and-a-half times the industry's total current annual production are anticipated this year by Barrett division, Allied Chemical Corp., New York City. The company anticipates a potential market of 4.5 billion square feet of fiberboard tile. Current production is around 3 billion square feet a year. Decorative tile are a major item in the growing market.

U. S. PLYWOOD SALES UP... Record sales of $238.7 million for the fiscal year ended April 30 are reported by U. S. Plywood Corp. Sales compare with $203.2 million in the like period of 1958. Net earnings of $13.4 million compare with $6.4 million a year ago. The company points out that its proposed acquisition of Booth-Kelly properties in Oregon will double the firm's ownership of timber resources on the west coast.

OREGON VENEER PLANT PURCHASED... Sherwood Forest Products, Coquille, Ore., has purchased Coos Veneer Co., Broadbent. Stan Sherwood, president of the new ownership, says operation of the plant will continue unchanged. The green veneer plant produces 7 million square feet a month. Other officers include William Ulett, vice-president and Max Powers, secretary-treasurer.

PACIFIC PLYWOOD BUYS MILL... The Mt. Bette Lumber Co. at Dillard, Ore., has been purchased by Pacific Plywood Co., also Dillard. The sawmill firm has been renamed Umpqua Lumber Co. It cuts 50,000 a day.

At the Plant Front...

WOOD "SANDWICH" PANEL... National Log Construction Co., Thompson Falls, Mont., is planning a new plant for construction of panelized residential building. The new panels will be three inches thick, prefinished inside and out, and will contain wiring and built-in heating ducts. National Log has been manufacturing pre-cut log cabins since 1946.

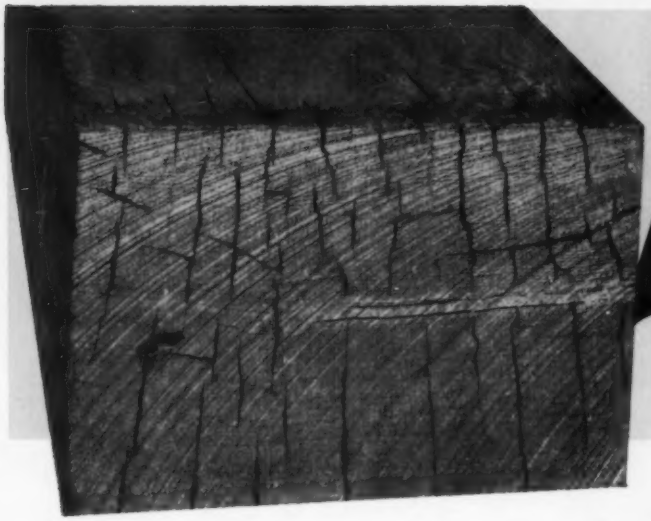
FABRICATING PLANT OPERATING... C&L Manufacturing Co. has started operating in Lynnwood, Wash., producing prefabrication structures, both commercial and residential. The plant will use about 30,000 board feet of lumber daily in production which will average six homes a day when in full production. The firm, owned by Alfred F. Crawford and Hal Lightheart, is also a distributor for Rilco laminated wood products.

NEW CALIFORNIA MILL... Holmes & Hannegan Lumber Co. is now operating a new sawmill at Santa Cruz, Calif. The redwood operation has a capacity of 75,000 feet a shift.

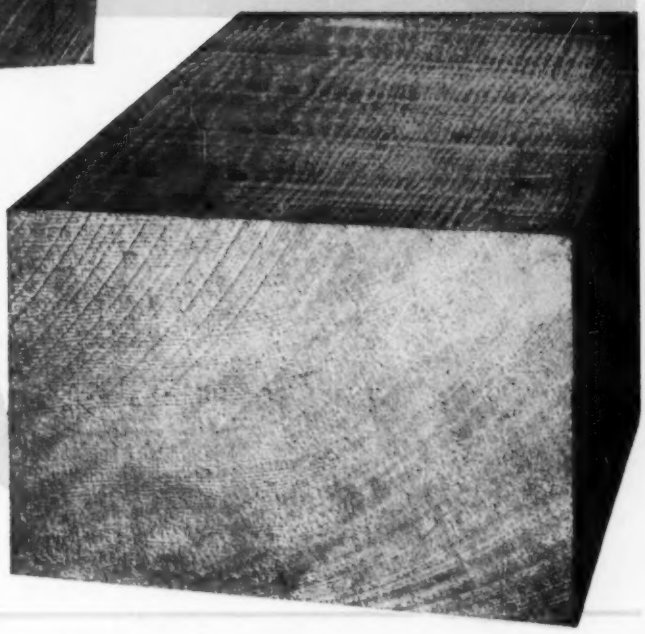
LONG-BELL STARTS CHELATCHIE, WASH., WORK... Preliminary work on construction of new plywood and lumber mill plants in the Chelatchie, Wash., area has been started by the Long-Bell division of International Paper Co. First project will be the plywood plant on which completion is expected in September. The mill projects, to be producing by mid 1960, will include sawmill, dry kilns, planing mill and chipping and barking facilities.

FANCY FACE VENEER PLANT DUE... Treeco Veneers, Inc., has been established at Vancouver, Wash., for the manufacture of hardwood veneers from both domestic and foreign woods. The new firm is associated with Treeco Sales Co., Oswego, Ore., which will handle sales.

More INDUSTRY NEWS on page 30



End checks are expensive!



CHAPMAN®

SEALTITE prevents them!

LOW-COST END-COATING FOR LOGS, LUMBER, TIMBERS

- Controls end-checking and reduces losses due to degrade
- Economical to use . . . costs just about one cent or less per square foot, applied
- Easy to apply by spray, brush or swab
- Effective for kiln drying as well as air seasoning
- Permits safe cold-decking of logs to insure uninterrupted mill operation
- Available in clear liquid and red and green colors
- Extremely stable in storage
- Prompt shipment in 52-gallon drums from Chapman Chemical Company plants and warehouses throughout the United States and in Canada and Mexico

MAIL COUPON FOR NEW ILLUSTRATED BOOKLET

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SEALTITE END-COATING

CHAPMAN CHEMICAL COMPANY

Leading manufacturer of wood preservatives

Memphis 1, Tenn.

Palo Alto, Cal., Portland, Ore., Minneapolis, Charlotte, N. C.

Chapman Chemical Company
Memphis 1, Tenn.

Send booklet on SEALTITE to:

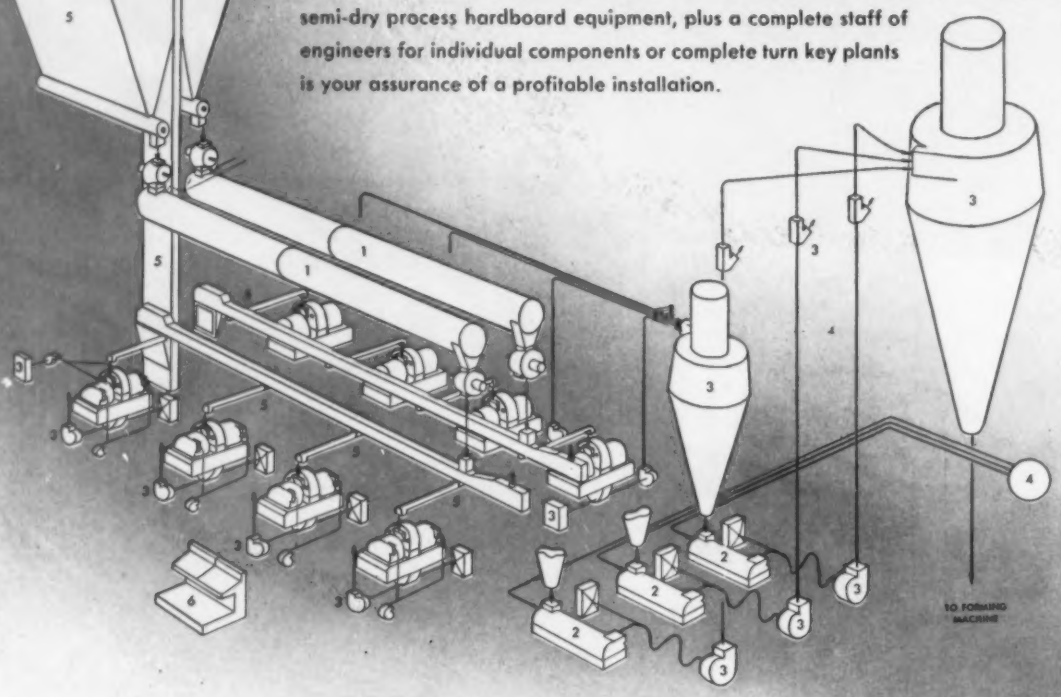
Name_____

Address_____

_____

Experience Counts!

GRENCO'S proven experience in the design and manufacture of dry and semi-dry process hardboard equipment, plus a complete staff of engineers for individual components or complete turn key plants is your assurance of a profitable installation.



Flow chart of a GRENCO installation similar to Masonite Ltd., Australia 300,000 square feet per day plant. This dry process pulping section includes the following GRENCO supplied systems:

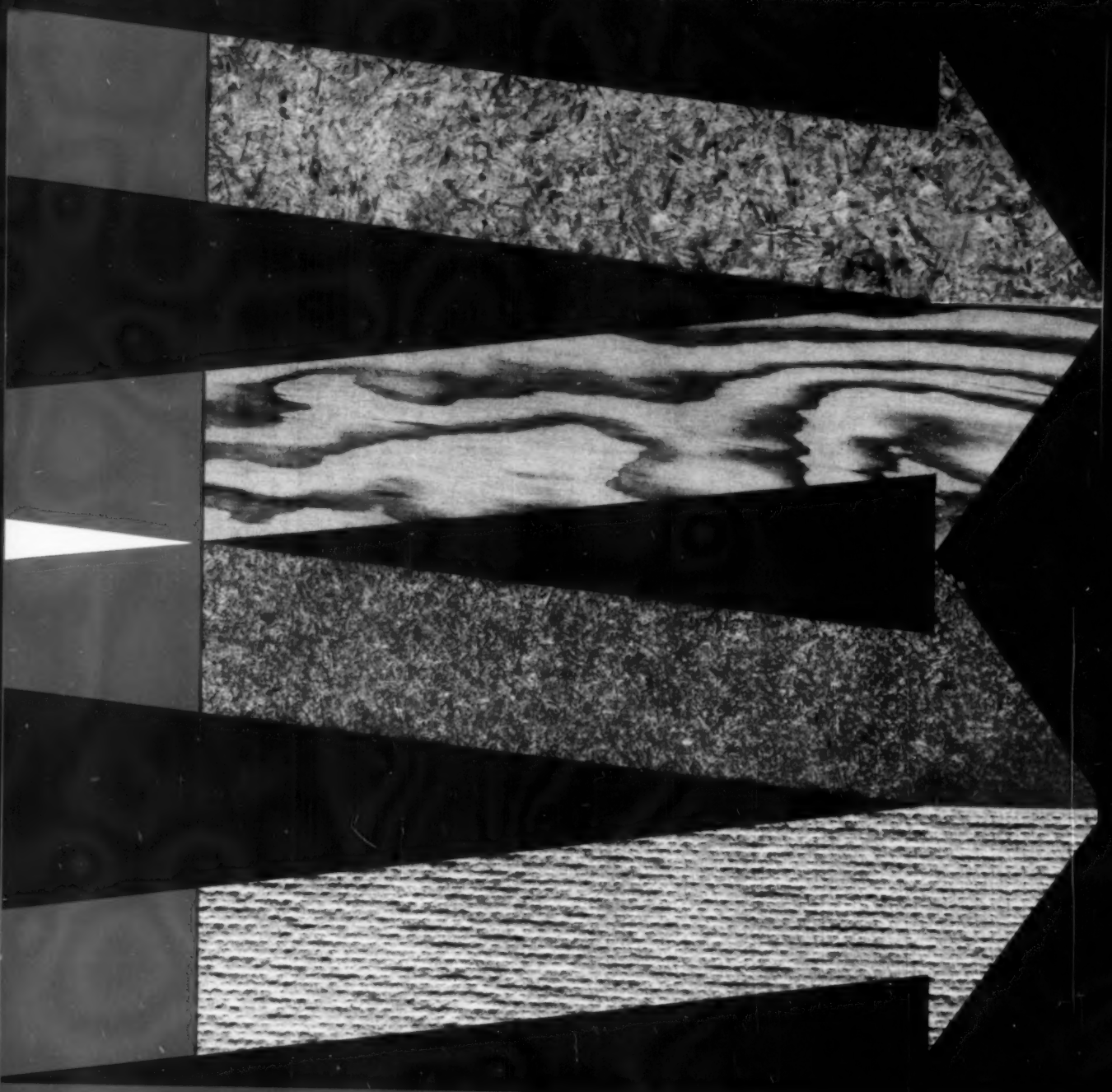
1. CONTINUOUS COOKING SYSTEM
2. CONTINUOUS BLENDING SYSTEM
3. COMPLETE FIBRE DRYING AND CONVEYING SYSTEM
4. COMPLETE CHEMICAL SYSTEM
5. MECHANICAL CONVEYING SYSTEM
6. ELECTRICAL DISTRIBUTION AND CONTROL SYSTEM
7. GENERAL ENGINEERING AND STARTUP SUPERVISION

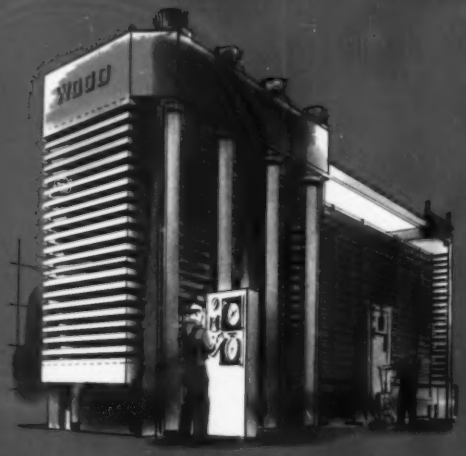
Every dry and semi-dry P.R.F. process hardboard plant in the world, existing or under construction, is utilizing GRENCO'S *components.*

GRENCO INC. ENGINEERING - MANUFACTURING

For Further Information, Wire or Write

GRENCO, INC.
2035 S. W. 58th AVE.
PORTLAND 1, OREGON





R. D. WOOD COMPANY

How to grow in the booming industry of composition board production!

Whether expanding present facilities . . .

or installing a new production system . . .

let R. D. Wood Company put their complete knowledge of the wood processing industry to work in the design and production of *your* hydraulic press installation. Wood Presses are built to perform for years. Many expandable design features help you grow in proportion to ever-increasing demands. Here's how . . .

Gear your production for growth, keep abreast

R. D. Wood Presses – engineered

will meet your needs for years

Grow with the press manufacturer who knows your needs and how to meet them. R. D. Wood Company! When you buy a Wood Press you're buying sound, dependable performance for many years to come. You're set to meet any market demand—profitably.

Specific Experience R. D. Wood Company knows the wood composition board industry—and they know the press business. This combination gives you the advantage of gaining pertinent knowledge and experience which can be applied to your specific problems.

Finest Quality Only the highest manufacturing standards and top quality materials are used in Wood Presses to guarantee you smooth, dependable performance; fast, economical production; trouble-free operation—features you naturally expect with a Wood Press.

Sound, Imaginative Engineering When your complete hydraulic press installation is designed, it's engineered to meet your present requirements *and*, if you desire, to anticipate future expansion. With sound planning, you can increase production without excessive time loss during conversion and without a major equipment investment. In some cases, you can actually *double* production with one machine.

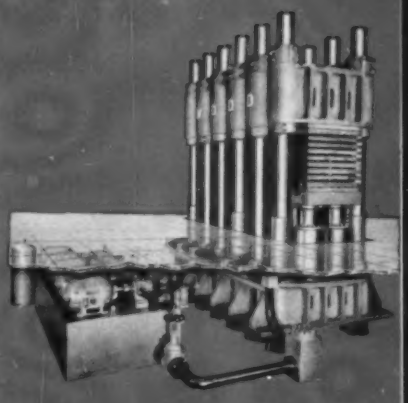
Engineering Service You get the benefits of experienced engineers who can advise you in preliminary planning, then save you money in the press design by utilizing basic R. D. Wood plans and applying your specifications and modifications. You suit your needs, yet save valuable engineering dollars!

A Complete Line from which to Choose You can get any size or capacity you need for your press operation, plus necessary valves, platens, accumulators, accessories. Shown here are a few of the basic presses available . . . one, or more, can meet your needs—exactly!

Choose your press from this complete line of composition board presses. For other special processes such as Chipboard, Flakeboard and Particle Board, there's a Wood Press to fit your exact requirements. All presses can be furnished complete with pressure and exhaust steam manifold and steam piping, self-contained, motor-driven pumping systems or valving and piping to operate from your accumulator systems. In addition, each press is designed to fit automatic loading and discharge units.

For Dry Process Hardboard

Machine Number 8197, accumulator operated hydraulic press. Capacity, 7,500-tons; platen size, 54" x 150"; number press openings, 10; height of press, 24'11"; floor space, 10'9" x 14'4". (Can be furnished with self-contained pumping unit if required.)

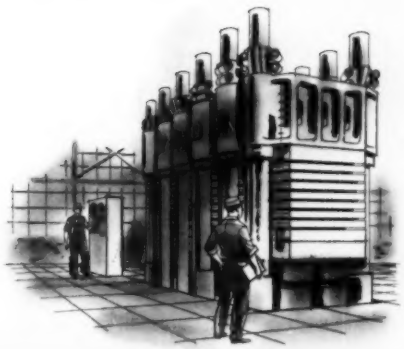


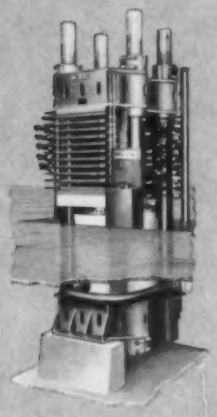
For Dry Process Hardboard

Machine Number 9423, self-contained hydraulic press. Capacity, 8,300-tons; platen size, 54" x 200"; number press openings, seven expandable to 15; height of press, 25'; floor space, 11'3" x 15'9" (press only).

of a thriving industry . . .

for top production



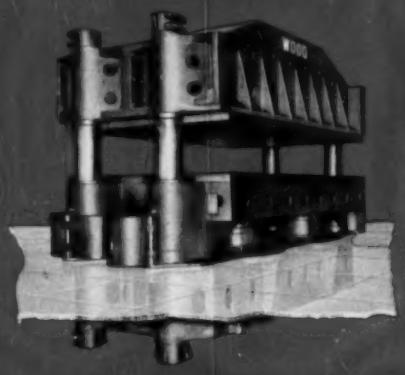


For Dry Process Hardboard

Machine Number 9282, self-contained hydraulic press. Capacity, 4,000-tons; platen size 56″ x 116″; number press openings, ten expandable to 16; height of press, 28′; floor space, 20′ x 20′.

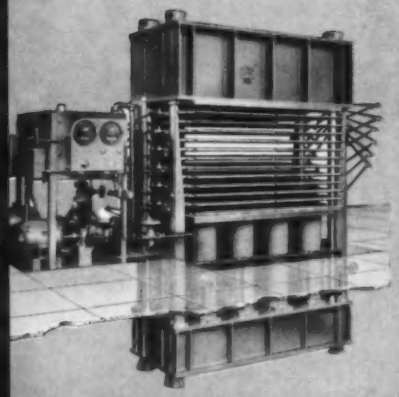
For Wet Process Hardboard

Machine Number 9313, self-contained hydraulic press. Capacity, 3,675-tons; platen size 54″ x 198″; number of press openings, ten expandable to 20; height of press, 33′; floor space, 11′6″ x 16′7″ (press only).



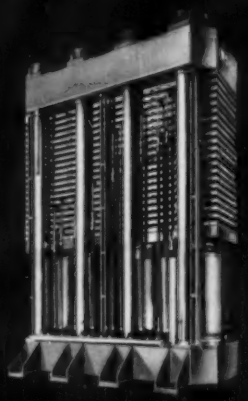
For Composition Board

Machine Number 9467, self-contained hydraulic press. Capacity, 1,200-tons; platen size, 13′10″ x 9′1″; height of opening, 3′—opens to 24″ for inspection and maintenance; stroke of rams, 24″; height of press, 14′; floor space, 18′2″ x 9′1″.



For Plywood

Machine Number 9292, self-contained hydraulic press. Capacity, 625-tons; for manufacturing sheets 50″ x 100″; stroke of rams, 39″; press openings, 12; height of press, 17′1″; floor space, 8′2″ x 20′8″ (press and pumping unit).

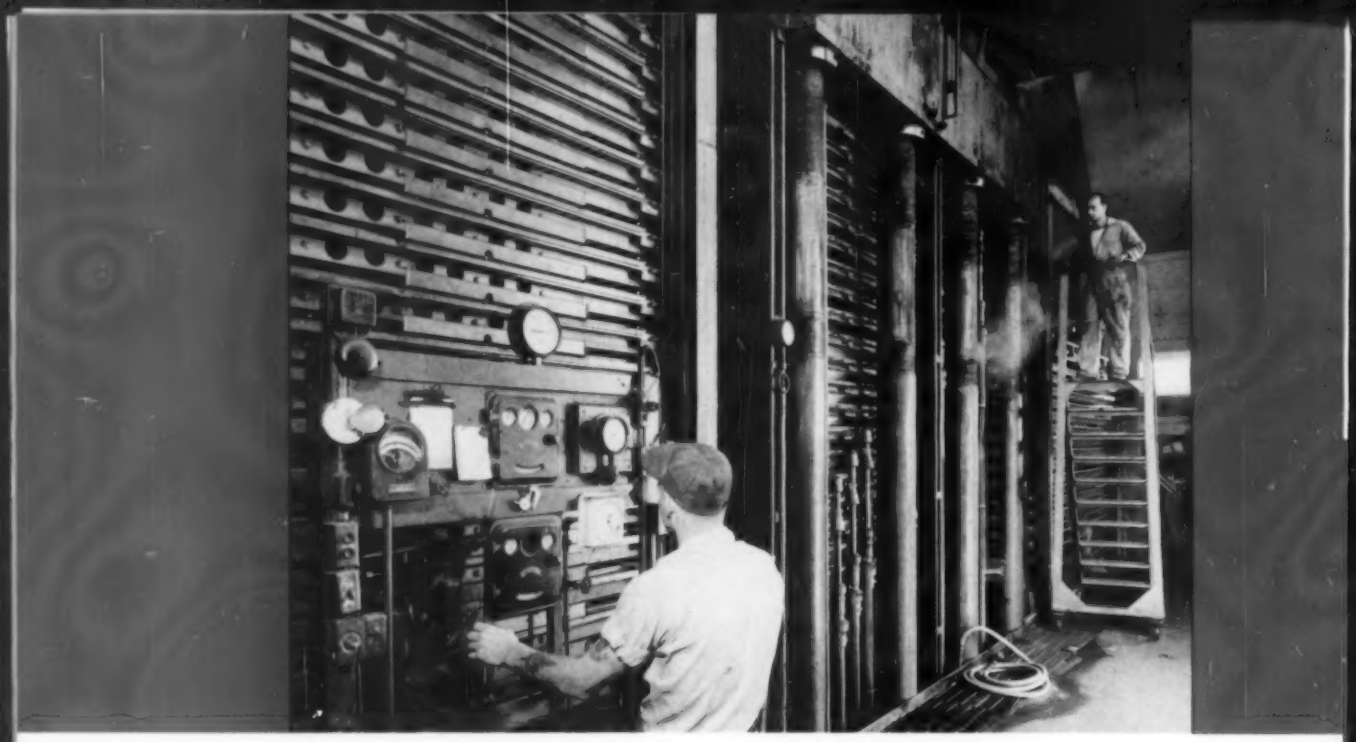


For Wet Process Hardboard

Machine Number 9471, self-contained hydraulic press. Capacity, 3,600-tons; platen size, 54″ x 198″; press openings, 20; height of press, 33′; floor space, 11′6″ x16′7″ (press only).

For Special Processes

Machine Number 9402, combination press for cement-asbestos board and corrugated cement-asbestos board, self-contained, high-production hydraulic press. Manual, semi-automatic or fully automatic. Capacity, 6400-tons; platen size, 55″ x 151″; single opening; height, 3′10″; height of press, 23′; floor space, 12′ x 12′ (press only).

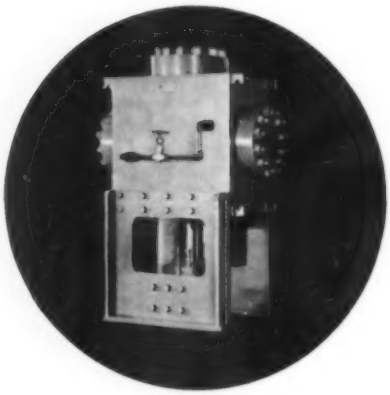


R. D. Wood precision-engineered steam heated platens...

give you superior finished products

Here's the perfect working surface for your board products. R. D. Wood Platens are precisely manufactured to give you the highest grade surface finish so that you can produce top quality products—consistently. They are made from solid steel slabs, machined to parallel tolerances of .003″ to .0015″ and drilled with extreme precision on accurately spaced centers to insure equal heat distribution throughout the platen.

There are three grades of finish available—*smooth tool finish*, provides a true surface suitable for most commercial applications; *emery-and-oil-finish*, used where processed material directly contacts platen, and exactly uniform product surface is not required; and *high polish emery-and-oil-finish*, completely free of tool marks, for direct contact processing with uniform surface appearance. Sizes range: 7′0″ x 34′0″ or 8′0″ x 26′0″, either steam or electric. *Perfect for your new press. Perfect for replacement on existing presses.*



Every valve you need for a complete hydraulic system.

When installing a new system or updating an existing installation, you can get any valve you need from one source . . . R. D. Wood. Choose from a complete line of stop valves, check valves, operating valves, safety relief valves, shock absorbers, accumulator control valves, a large variety of special valves. With each you receive the same reliable performance as with every Wood Press, because they're built to handle the toughest jobs—resist the roughest treatment.

First step to composition board production—contact R. D. Wood Company

Here's the logical way to start *your* plans for expansion. From R. D. Wood Company, you can get the benefits of the experience of many years, and many press installations, to be applied to your own situation. Write today for further information and be one step closer to a more profitable business.

R. D. WOOD CO.

PUBLIC LEDGER BUILDING • PHILA. 5, PA.

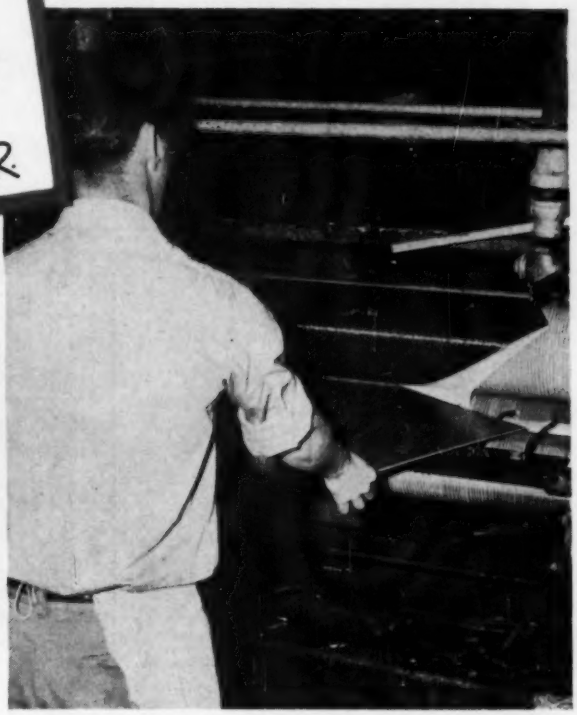
Weyerhaeuser Silvatek panel products do these jobs better

ACTION MEMO

To purchasing department:
Get samples and prices on
this complete panel line.
G.B.R.

PLY-VENEER® . . . an economical kraft overlaid veneer panel material selected for this furniture application because of its strength, bendability and impact resistance. These versatile panels also are fabricated into drawer bottoms, dust stops, cabinet and mirror backs and other furniture components. Ply-Veneer is available in 24 constructions to meet your specifications.

VERSABORD . . . a grainless, knot-free particle board panel manufactured to a precise caliper tolerance of ±.010". Note dense "splinter proof" edges. Panels are presanded both sides. They arrive at your plant ready for use as core stock for fine wood veneers or decorative plastic laminates. Versabord can be used with 3 or 5 ply constructions.



WEYTEX . . . an improved hardboard specified because of its outstanding performance characteristics. Strong, smooth-surfaced Weytex is evenly coated with glue and faced with 1/28" veneer to form thin, durable end panels for furniture of modern design. Each panel has a close caliper thickness throughout that ensures maximum surface contact in laminating to fine wood veneers or other materials. Specify dependable Weytex for facing, core or crossbanding in your quality production.

Here are tested and proved panel products of Weyerhaeuser development that you can specify with confidence. Preliminary research on Versabord was started by Weyerhaeuser scientists as early as 1946. Weytex hardboard is a product of 15 years study and process improvement. The kraft overlaid veneer sandwich, Ply-Veneer, underwent 4 years of research and experimentation before it was introduced in 1953. In all three panel products a rigid quality standard is consistently maintained through a detailed system of production line testing, inspection and grading. This ensures panel to panel uniformity and dependability for your production.

For more information on Weytex, Versabord and Ply-Veneer panels, write:

Weyerhaeuser Timber Company

Silvatek Products Division • Tacoma, Washington

Hardboard Industry Launches Promotion Campaign

By DONALD LINVILLE
Executive Secretary, Hardboard Association

Paradox is the word that comes to mind as we view the status of the hardboard industry in these mid-months of 1959.

While the industry has continued to grow, as it has in past years, the growth has not necessarily meant "profit-growth" to all individual manufacturers.

DEMAND IS HIGH for hardboard products of all kinds and domestic production facilities are geared to meet the demand, but hardboard imports have stiffened the competition for known markets in this country.

In view of the situation, the hardboard industry through its association and the member companies have launched an all-out effort to find new hardboard markets, and expand the use of hardboard in traditional and more recently developed markets.

The effort is based on a long-range industry plan to place more emphasis on concentrated market promotions, rather than trying to reach too many markets at one time with token coverage. Meanwhile, the industry is constantly analyzing the potential, seeking new market outlets.

During the last year, for example, the hardboard industry singled out the school construction market as one where additional promotion could be productive.

There is a good possibility that the nation, with one-story school design, could obtain about one-third more school rooms for its money by using wood construction. Hardboard fits into this practical, low-cost picture.

HARDBOARD IS USED widely as components of school furniture, as chalkboards and tabletops, as well as for built-in wainscoting, siding, soffits, and wall covering. A closer study of the market, however, pointed to the greater sales opportunity for perforated hardboard.

In addition to its bulletin board utility, it was found that our perforated product is a preferred material for sound conditioning rooms used for orchestra and choral group rehearsals, basketball courts and other enclosed areas where sound should be contained or controlled. Suffice to say, a thorough promotion was beamed at this market, which emphasized the sound control properties of perforated hardboard.

We are confident that this kind of major-market analysis and promotion will gain momentum and produce spectacular results.

Meanwhile, we know that this country has a long way to go to equal the per capita consumption of hardboard in other hardboard producing countries. The following table brings this point into focus:

Annual Per Capita Consumption in Other Countries*

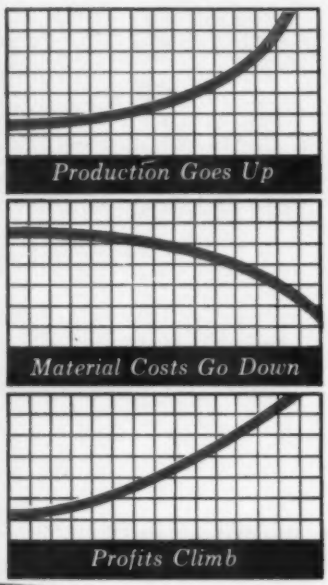
Sweden	23**
Norway	20
Finland	17
Canada	11
The Netherlands	9
U. S. A.	8
United Kingdom	5

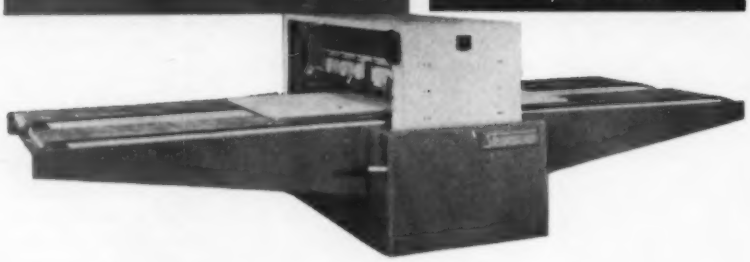
*Represents both hardboard and insulation board, hardboard comprising 84% of the total amount shown.
**In kilos (1 kilo equals 2.205 lbs.)

(Continued on page 34)

STEINEMANN COATER

OPENS NEW HORIZONS IN EFFICIENT FINISHING





★ Applies a uniform film at high speed
★ Complete recovery of unused materials
★ Uses greater range of finishing materials
★ Coats all thicknesses, sizes and most shapes

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Setting the standards of quality in the particle board industry...

through scientific research

Pacqua, Inc., the pioneer in developing particle board products of high quality, is steadily widening the gap over competitors in research, product development and standards. How did Pacqua get so far ahead, so fast? An early nucleus of the best research and product development talent was assembled . . . and what a trail these men are blazing! First, the announcement of the new Par-WOOD interior board, Par-TEX exterior particle board and Par-TILE natural wood block flooring. Then in close succession, Duo-FACE Par-WOOD, IRB Insect Repellent Board, Par-FORM concrete form, Par-TEX siding, and Par-TILE wall tile . . . making ever-increasing use of its fine facilities in machinery and manpower.

Pacqua INC.

Now the industry looks to Pacqua . . . years ahead in product development and standards. And Pacqua looks ahead to greater challenges.

- World's largest manufacturer of diversified particle board products.
- Industry's finest product research department. A continuing product-development program.
- Exclusive manufacturing methods and equipment makes possible exact quality control . . . Equal density throughout every square inch of board.
- Modern, aggressive marketing and distribution methods.
- National advertising and promotion.
- Hard-hitting sales organization with lots of hustle.
- A list of the finest buyers in the country.

All of these plus factors add up to leadership in the particle board industry for Pacqua, Inc. Dillard, Oregon.

Par-WOOD
Par-TEX
Par-TILE natural wood block flooring
Duo-FACE, Par-WOOD
IRB Insect Repellent Board
Par-FORM—Concrete form
Par-TEX, siding
Par-TILE wall tile

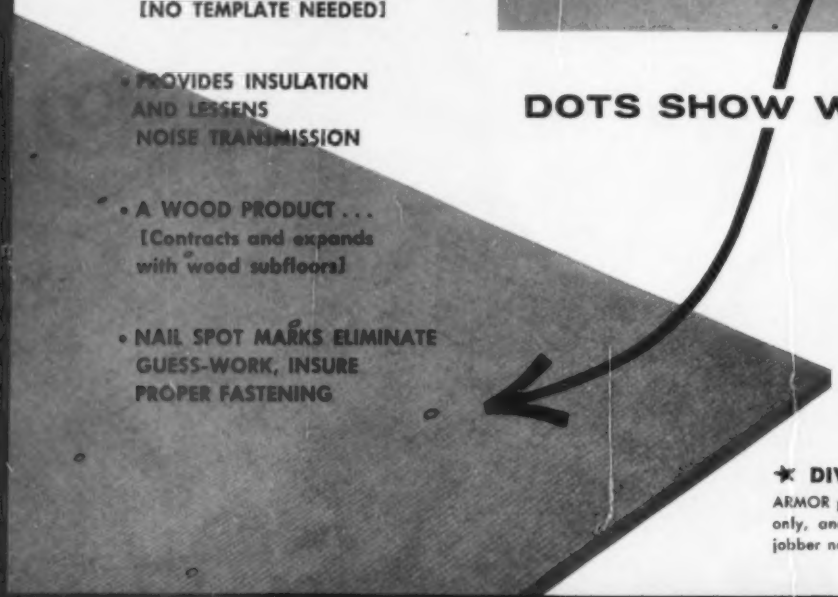
International Sales Representatives:
PLYWOOD SERVICE, INC., P. O. Box 78, TWX-RS-54 U, Phone OSborne 9-8781, Dillard, Oregon

Send me full information on your particle board products.

NAME .....
FIRM .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

ARMORBORD UNDERLAYMENT

- PROVIDES SMOOTH, FLAT BASE FOR RESILIENT FLOORING MATERIALS
- MINIMIZES UNEVEN WEAR CAUSED BY ROUGH SUBFLOOR
- IDEAL FOR REMODELING OR NEW CONSTRUCTION
- FAST APPLICATION [NO TEMPLATE NEEDED]
- PROVIDES INSULATION AND LESSENS NOISE TRANSMISSION
- A WOOD PRODUCT . . . [Contracts and expands with wood subfloors]
- NAIL SPOT MARKS ELIMINATE GUESS-WORK, INSURE PROPER FASTENING



DOTS SHOW WHERE THE NAILS GO

Now eliminate the need for nailing templates when you install hardboard underlayment. ARMORBORD underlayment is delivered *spot marked* for nailing. Installation is fast and simple. Guess-work is eliminated.

Panels come in convenient 4'x4' size. They're easy to handle. Waste often caused by larger sizes is reduced.

★ DIVERSIFIED JOBBER DISTRIBUTION

ARMOR products are distributed by independent warehousing jobbers only, and that's important to you because there's an independent jobber near you who will maintain constant and speedy service.

ANACORTES VENEER, Inc.

General Sales Office: Anacortes, Wash.

Midwestern Sales Office: 13375 Watertown Plank Road, Elm Grove, Wis. • Eastern Sales Office: 11 North Essex St., Dover, N. J.

Each has his own reasons why **FORD INDUSTRIAL ENGINES**

best meet new equipment requirements

EQUIPMENT DESIGNER: "The engines we use must be compact, durable and efficient. We find Ford's space-saving construction with high power-to-weight ratio gives us greater freedom of design. And thanks to Ford's wide range of engines and the consulting services of the Ford Sales Engineer, we get Ford power that's tailored to our needs."

SALES MANAGER: "Most of our customers are pre-sold on Ford power. They know Ford engines are dependable and economical. We recommend Ford power because it pays off in satisfied customers and repeat sales!"

SERVICE MANAGER: "Ford's world-wide service facilities are second to none! Our dealers report customers have less downtime because they get prompt service from Ford Dealers everywhere."

PURCHASING AGENT: "Due to modern production methods, we get Ford engines at low initial cost. And when increased sales suddenly boost production, Ford provides speedy delivery service to fill our orders."

COMPANY PRESIDENT: "Since our products are no better than the engines that power them, we insist on the best—Ford Industrial Engines. Built and backed by one of the world's most successful manufacturers, they protect our reputation and customers' investments."

FORD SALES ENGINEER: "Ford Industrial Engines range from 134 to 534 cubic inches. *All* are available as engine assemblies or power units. We will be happy to recommend the right engine for your application – or help you solve any other power problem you have. For complete information, write Ford Industrial Engine Department, Ford Division, Ford Motor Company, P. O. 598, Dearborn, Michigan."

Ford

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AND POWER UNITS

YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED!

Borden

plywood adhesives service is only a phone call away

Wherever you are in the West, get service *fast* when you phone your nearest Borden representative for adhesives. Tank car, tank truck, or drums of resin are available on short notice, serviced by experienced men located near *you* for *your* convenience.

This quick and handy service is backed by Borden's 25 years of manufacturing knowledge in "tailoring" adhesives to fit your needs.

Phone your nearest Borden representative or write The Borden Chemical Company, 6010 Airport Way, Seattle 8, Washington.

IF IT'S A

Borden *Chemical*

IT'S GOT TO BE GOOD

SEATTLE, WASH.
PARKWAY 2 3700

SPOKANE, WASH.
RIVERSIDE 7 7355

TACOMA, WASH.
FULTON 3 4293

SPRINGFIELD, ORE.
RIVERSIDE 7 3343

GRANTS PASS, ORE.
GREENWOOD 9 1088

REEDSPORT, ORE.
CRESTVIEW 1 2953

PORTLAND, ORE.
NEPTUNE 6 5860

EUREKA, CALIF.
HILLSIDE 2 1210

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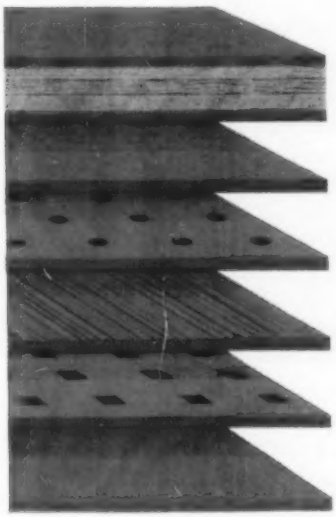
LEBANITE
HARDBOARD'S

INTERLOCKED *Fingers of Fiber...*

PROVIDE the Internal Strength Required for Outward Appearance, Abrasion Resistance, and Superb Machining Qualities.



If you need a board material that is (1) smooth both sides, (2) scuff and abrasion resistant, (3) without grain hence equally strong in all dimensions, (4) light in color and excellently paintable, (5) available in any specified thickness from 1/10" to 3/8", laminated to 1-1/2", (6) extremely useful where high internal bond strength is required, as in plastic laminating processes—Lebanite Hardboard is the solution to your problems.

There is a reason why Lebanite excels in both performance and quality. Complete quality control in every step of production, from raw material to the finished Lebanite panel, produces for you a board material that is "up to snuff" for every application in manufacturing, building and industry. *WRITE for complete information, stating intended application.*

Cascades Plywood Corporation

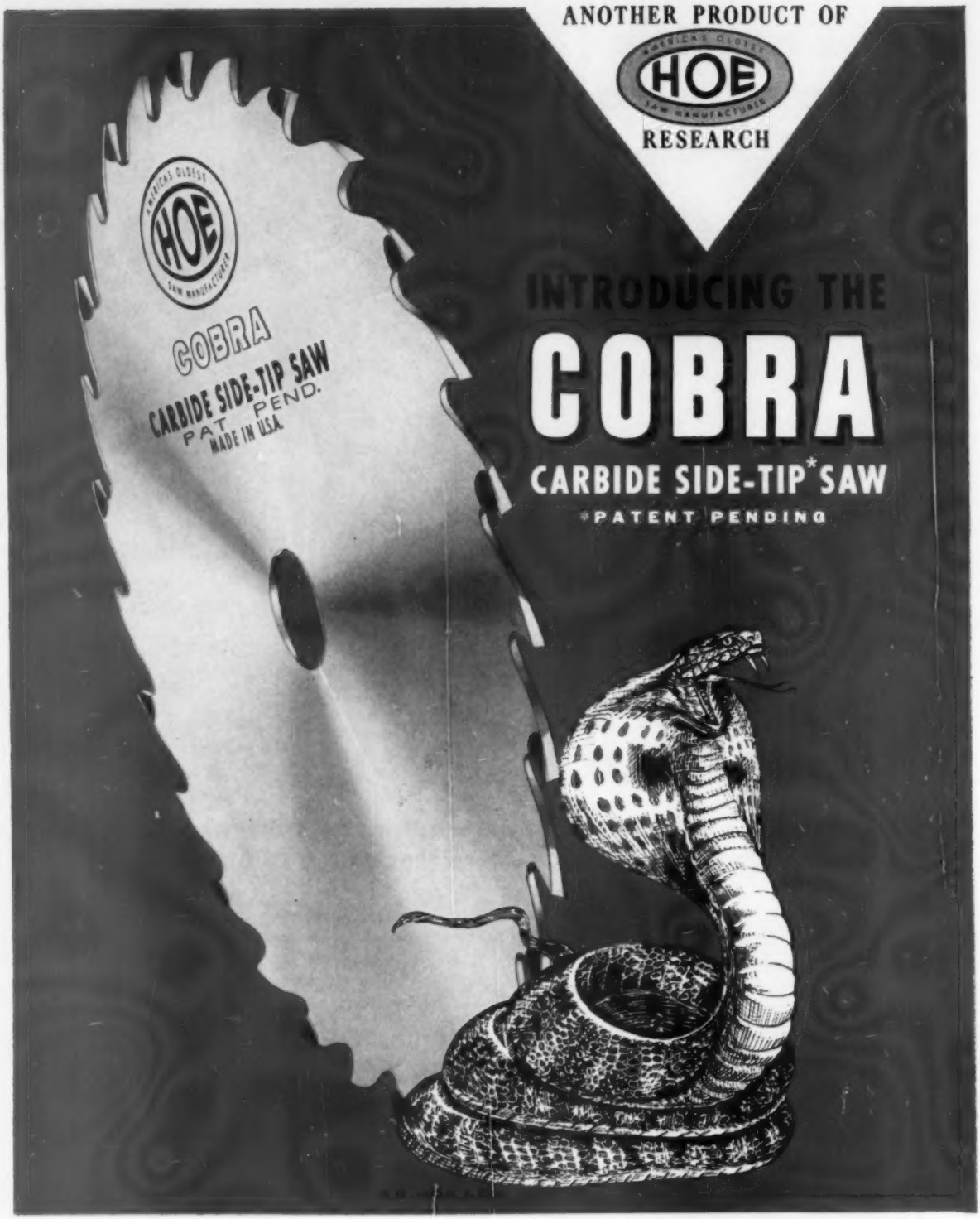
CPC **LEBANITE DIVISION**

Public Service Building
Portland 4, Oregon

Manufacturers of: Lebanex • Lebanite • Perfo-Round and Perfo-Square • Stri-Board • Ridg-Board

ANOTHER PRODUCT OF
HOE
RESEARCH

INTRODUCING THE
COBRA
CARBIDE SIDE-TIP* SAW
*PATENT PENDING



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M-21

HOE BREAKS THE SAW BARRIER!

THE MOST REVOLUTIONARY DESIGN CONCEPT SINCE THE ORIGINAL HOE CHISEL-TOOTH PATENT

PROBLEM

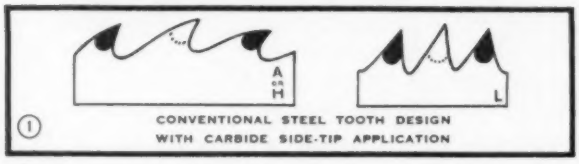
- To develop and produce an intermediate saw, moderately priced . . . for rough, tough applications.
- A saw having the advantages of a standard steel saw, the long life of a carbide saw . . . without its limitations.
- A saw that would stand up to the ever increasing speeds and feeds demanded by modern sawmilling and woodworking techniques.
- A saw that would decrease downtime between sharpenings and could be sharpened in the field.

ANSWER

HOE COBRA
WITH CARBIDE SIDE-TIP APPLICATION

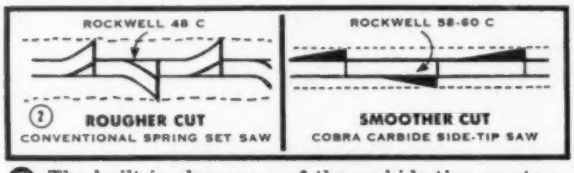
Hoe's new 'COBRA' Carbide Side-Tip Saw meets all these specifications . . . and more! The application of carbide to the *side of the teeth* is designed to give performance previously unavailable to the sawing industry.

ADVANTAGES OF THE HOE 'COBRA' CARBIDE SIDE-TIP SAW



① CONVENTIONAL STEEL TOOTH DESIGN
WITH CARBIDE SIDE-TIP APPLICATION

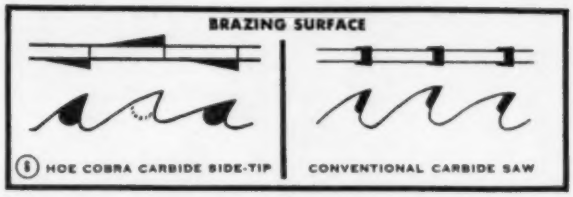
1. Carbide side tipping permits conventional steel tooth design.



② ROUGHER CUT
CONVENTIONAL SPRING SET SAW

SMOOTHER CUT
COBRA CARBIDE SIDE-TIP SAW

2. The built-in clearances of the carbide tips create a permanent set. The combination of carbide and high steel hardness results in a permanent rigid set as compared to conventional spring tooth set.
3. The rigid teeth on the 'Cobra' permit constant clearance resulting in a reduction of horsepower consumption.
4. By specially controlled induction brazing and heat treatment of the tooth, the steel portion retains a hardness of 56 to 58 Rockwell C.
5. The tooth construction of the 'Cobra' gives the high wear-resistance of carbide and the shock resistance of steel . . . permitting feeds and speeds unattainable with conventional carbide saws.



① HOE COBRA CARBIDE SIDE-TIP

CONVENTIONAL CARBIDE SAW

6. The large brazing surface of this special Hoe tooth design, combines to permit applications where conventional carbide saws fail. Thinner kerf is possible with the new 'Cobra' design.
7. 'Cobra' side-tip saw construction permits many more sharpenings than conventional carbide saws.
8. The sharpening of the 'Cobra' is simplified to the extent of a light face grind with the use of a silicon carbide wheel. The combination of thin carbide and conventional tooth design permits field maintenance on standard sharpening equipment.

DRAMATIC EXAMPLES OF THE COBRA'S PERFORMANCE

4 Cobra saws on a gang rip cutting hard oak, ran 2 full shifts between sharpenings, compared to a swaged steel saw 2½ to 3 hours between sharpenings.

On a ripping operation at 450 feet per minute the Cobra performed for 12 to 16 shifts between sharpenings . . . compared to the steel saw's life of 4 hours between sharpenings.

On many trim and edger operations the Cobra saws have cut for several months between sharpenings, decreasing down-time at substantial maintenance savings.

In many other operations cutting green and kiln-dried hard and soft woods, the Cobra has proved its superiority over conventional saws. Its economical price is the dollar and cents answer for simpler, less costlier ways to handle your production.

This amazing record of dependable performance is your assurance of long, trouble free operation. It is still another reason why men whose business it is to keep production rolling . . . always insist upon HOE . . . *The choice of experts since 1828.* You cannot do better.

H-31 CUT OUT AND MAIL

R. HOE & CO., INC. • 910 East 138th St. • N. Y. 54, N. Y.

Please have a Hoe representative call on me to explain full particulars and operations of the Hoe 'Cobra' Carbide Side-Tip saw.

NAME TITLE

COMPANY

PRODUCT

ADDRESS

CITY STATE

NEW SAWMILL OPERATING . . . Cedar Lumber, Inc., has started production at its new mill in Mill City, Ore. The plant will specialize in cedar, but will also process hardwoods and fir. Capacity is 50,000 to 60,000 feet a day. Owners are Don Walker, president; Burton Boroughs, vice-president; and Don Jenkins, secretary-treasurer.

Personalities . . .

DIAMOND GARDNER PROMOTES FAY . . . Joseph R. Fay has been promoted to assistant to Leo V. Bodine, vice-president of Diamond Gardner Corp.'s forest, lumber and retail group. Mr. Fay will headquarter in Spokane, Wash. Directors of industrial engineering and of research and product development for the company's lumber manufacturing and retail divisions will report to Mr. Fay.

C-Z MANAGEMENT CHANGES . . . A. B. Layton has been elected chairman of the newly established finance committee of Crown Zellerbach and will preside at stockholders meetings and meetings of the board and executive committe in the absence of J. D. and H. I. Zellerbach. He is succeeded as president and administrative officer by Reed O. Hunt who has been executive vice-president and chief operations officer.

RED CEDAR GROUP PICKS DOUGLAS . . . Gordon Douglas, Powell River Forest Products, Ltd., New Westminster, B. C., is new president of the Western Red Cedar Lumber Association. Other officers named at the annual meeting in Port Townsend, Wash., include Harry E. Morgan, Jr., Weyerhaeuser Timber Co., Snoqualmie Falls, Wash., vice-president and John McCrory, treasurer.

U. S. PLYWOOD PROMOTES LEEPER . . . Marshall R. Leeper has been elected a vice-president of U. S. Plywood Corp. Mr. Leeper has been with U. S. Plywood since 1954 when the plywood firm purchased Shasta Box Co., Redding, Calif., of which he was president. He has served since 1955 as general manager of Oregon operations.

NEW MANAGER DUE HINES OPERATION . . . Wm. J. Runckel will take over as general manager of the Dee, Ore., division of the Oregon Lumber Co., an affiliate of Edward Hines Lumber Co., at the first of the year. He will succeed L. J. Roedel who is retiring. Mr. Roedel is ending 49 years in the lumber business. Mr. Runckel, who helped develop the hardboard making process used at Dee, has been serving as manager of the hardboard plant.

CANADIAN WOOD PROMOTERS ELECT . . . G. Cleveland Edgett, for many years in charge of sales promotion activities for the British Columbia Lumber Manufacturers Association, has been named executive director of the newly organized Canadian Wood Development Council, Ottawa. The new group is pushing the sales and use of all Canadian wood products in all markets, but with emphasis at present in the domestic market.

TIMBER PRODUCTS MANUFACTURERS MEET . . . Fred Broeder, Jr., Broeder Brothers Lumber Co., Kalispell, Mont., was elected president of Timber Products Manufacturers Association at its annual meeting in Spokane, Wash. Other officers named include Joseph L. McCarthy, White Pine Lumber Co., Orofino, Ida., vice-president; Allen Avey, Avey Brothers Lumber Co., K[illegible]le Falls, Wash., treasurer; George J. Tichy, re-elected secretary.

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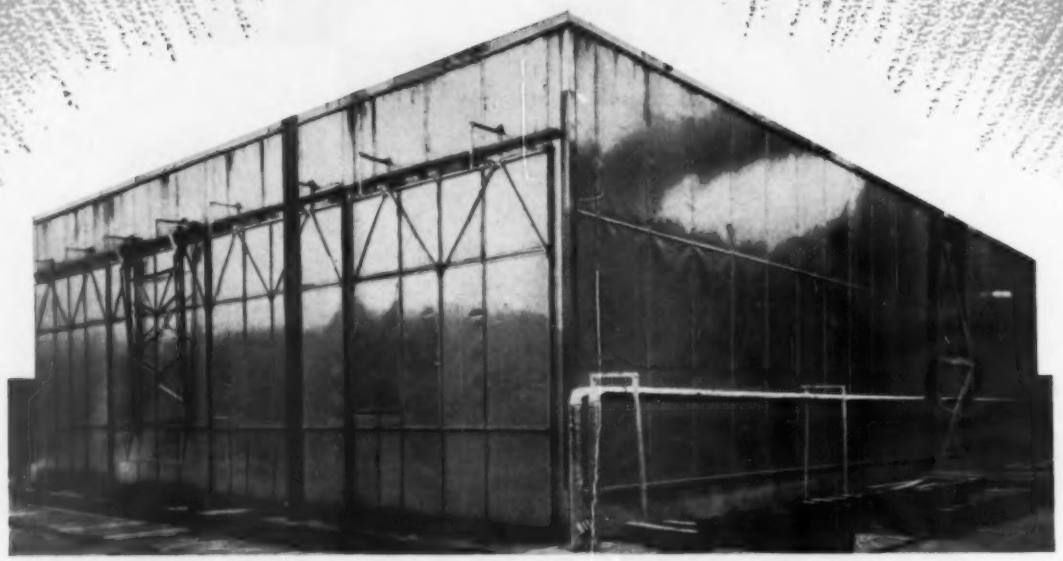
STANDARD
DRY KILNS NOW IN WESTERN STATES



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After successful installations in two MacMillan & Bloedel Ltd. plants and repeat orders for six additional kilns, Standard now has full representation in the Western States. Here is the Kiln that has delivered PROVEN RESULTS under the toughest conditions:

FIRST! in Direct Driven Motor and Fan Units Inside Kiln, Eliminating Line Shafts and/or Gear Drives.

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STANDARD DRY KILN COMPANY

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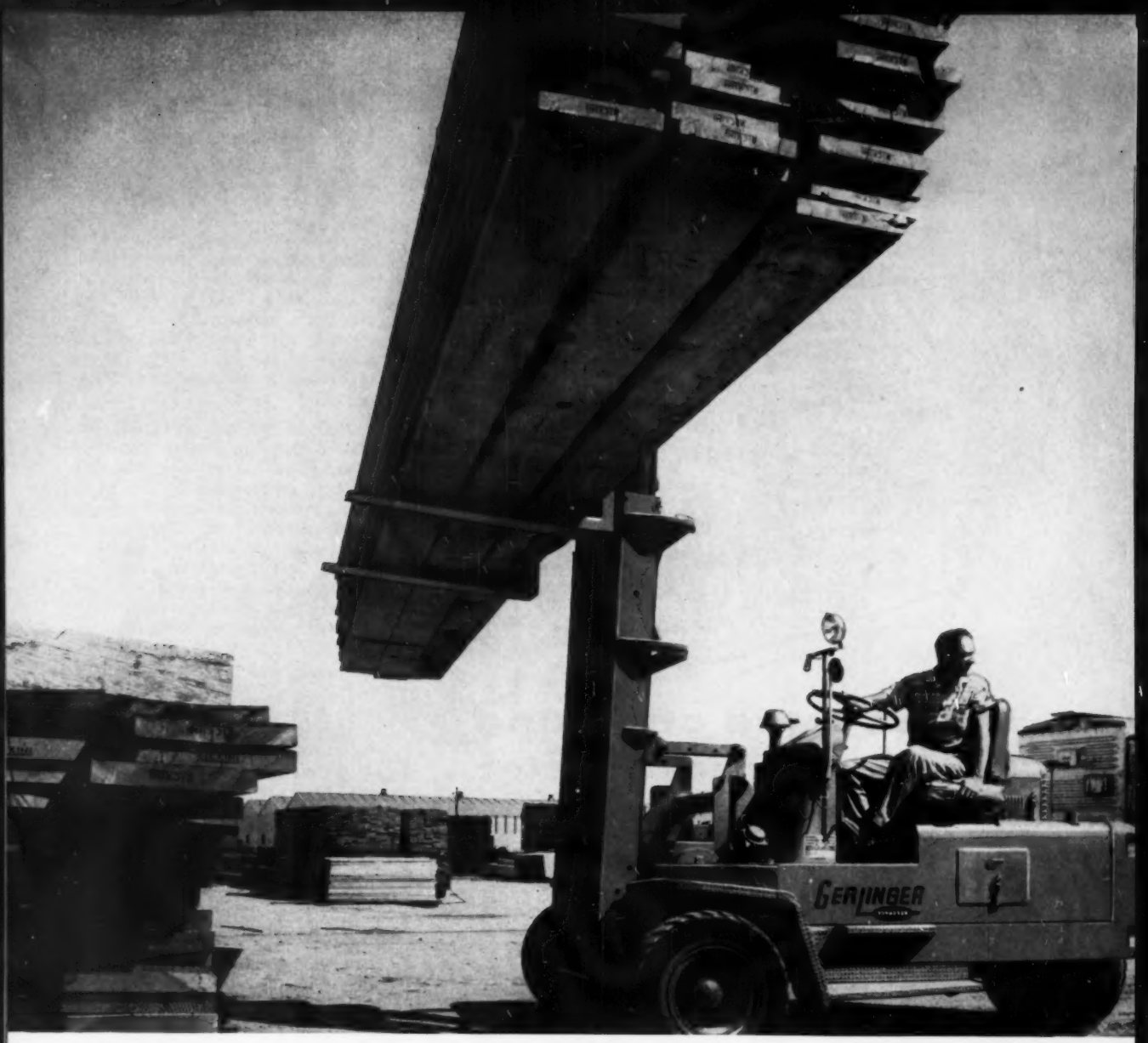
In Arizona and New Mexico, contact Patterson Sales Company, 618 E. Yandell St., El Paso, Texas



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You're seeing a Gerlinger Fork Lift Truck showing some of the remarkable stamina and stability that causes users to say, *"Our first choice is Gerlinger for the BIG JOBS!"*

What you can't see till you own one are the tremendous savings you gain. As you move more tons per hour . . . at much less cost . . . your profits increase in proportion. *Gerlinger* offers standard gas-powered, pneumatic-tired, *Job-Proved* fork lift trucks that handle as much as 40,000 pounds per trip. (Diesel engines optional.)

Want to see how savings match the load? Ask for Certified Job Studies covering your specific handling operations—and new Gerlinger Specifications Folder *GSS*. Write Towmotor Corporation, Cleveland 10, Ohio or Gerlinger Carrier Company, Dallas, Oregon.*

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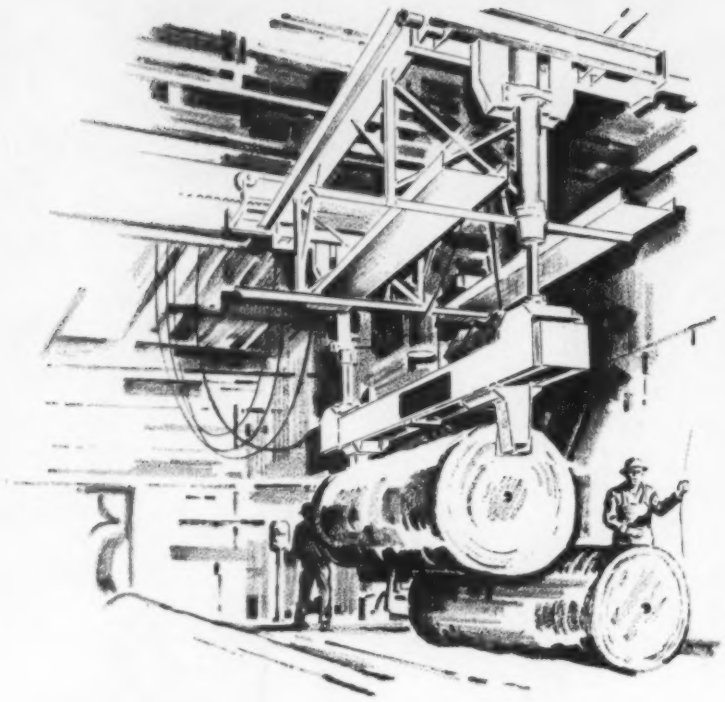
THE ONE-MAN-GANG

-GERLINGER LEADERS FOR 40 YEARS IN BUILDING FORK LIFT TRUCKS, CARRIERS AND TRACTORS

*Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation



Saves lathe chucking time on every peeler

The EDERER OVERHEAD LATHE CHARGER is "job-engineered" to pick up a peeler—pre-center it to lathe chucks—and move it forward to exact chucking position. In a five-hour, clocked operation, average chucking time was only 18 seconds after peeler knife was retracted! In this same five-hour period, the charger handled 75 102-inch long peelers of average 36-inch diameter.

Equally efficient is the floor-mounted lathe charger, designed for use where overhead clearance is restricted.

Both overhead and floor-mounted chargers are hydraulically operated from one set of controls, located for the operator's convenience. With the two models to choose from, you can have a charger to fit your exact plant requirements. Either charger can be supplied in a simpler adaptation to load your barker, too.

Write for EDERER Lathe Charger Bulletin V-106.

Inquire about our complete line of overhead cranes. Write for industrial crane catalog, Bulletin CR-610 (revised).

EDERER *Plywood* **EQUIPMENT**

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EXPORT DIVISION: 301 Clay Street, San Francisco 11, California

Since 1901 — "JOB-ENGINEERING" CRANES AND HEAVY EQUIPMENT

Hardboard Industry Launches Campaign

(Continued from page 22)

It is not practical to assume that the consumption of hardboard will ever proportionately match that of the other countries listed, because, here, there are more alternate panel materials. But it makes sense that our per capita consumption can be increased. This is one of the basic objectives of the more comprehensive Hardboard Association promotional program.

PROMOTIONAL EFFORT, too, must continue to saturate the home construction market, since housing starts are an important factor in hardboard products production. Housing starts predictions for 1960, the first year of an expected building boom decade, and further acceptance of hardboard for many uses in new houses, indicate a substantial increase in hardboard sales for some time to come.

The future of the industry finds assurance, also, in the most recent report of the Stanford Research Institute, which predicts a peak of 1,945,000 housing starts annually by 1975, accompanied meanwhile by a proportionate rise in industrial, commercial, institutional and public utility construction. The SRI study also pointed out that housing replacements will expand from 500,000 annually, now, to 700,000 annually by 1975.

GREATER USE of hardboard in all the above categories is expected by hardboard producers, who in recent years have placed more emphasis on specialty products such as prefinished hardboard wall paneling, for example.

Large volumes of hardboard in the past have gone into kitchen cabinets, closet liners, soffits, and other small footage uses in home, commercial and industrial construction and into underlayment, siding and concrete forms which represent large footage uses. But the new concentration on specialty products for interior wall surfaces will add substantially to volume sales in these markets, as these products gain in popularity. The Stanford study predicts that hardboard production for all uses will reach 3 billion square feet (⅛-inch basis) by 1975.

•

Firm Adding Kilns

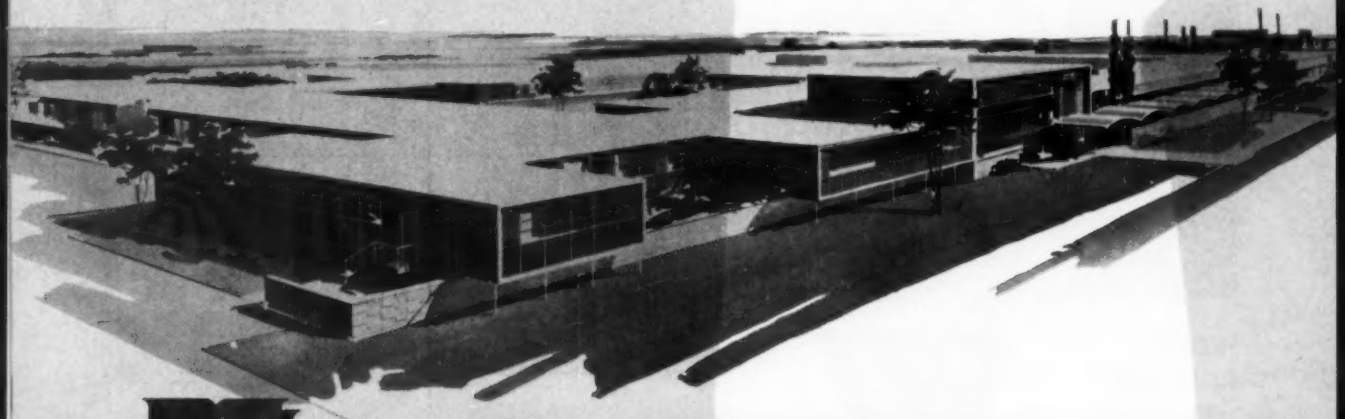
Pope & Talbot, Inc. is adding two double end and one single dry kiln at St. Helens, Ore. The project will cost about $200,000.

Essential for Progress...

American-Marietta proudly dedicates its new Research Center to the growth and prosperity of the industries which it serves — today and tomorrow.

This outstanding achievement in industrial laboratory design, located on Harbor Island in Seattle, is the most extensive installation of its type in the western United States. In these modern facilities research programs are concentrated on new and improved synthetic resins for use in plywood, composition boards, wet strength and special papers, corrugated containers, pulp moldings, mineral wool, foundry cores, shell molds, molding compounds, and many other products.

Research enables American-Marietta to supply industries with new and better products which, in turn, make it possible for them to manufacture, market and compete more profitably.



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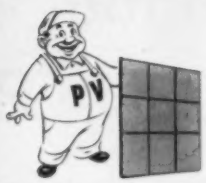
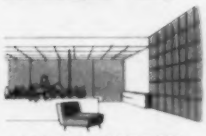
as United States
SALES AGENTS FOR PV HARDBOARD

a PV Hardboard for every need.....

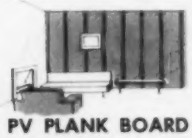


Dramatic Feature Walls
"Custom-designed" Ceilings



PV SQUARE-TEX

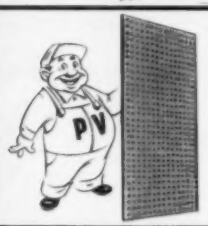
Blends with contemporary or traditional furnishings



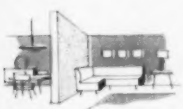
PV PLANK BOARD

Random-width . . . prime-coated, ready for painting

PV COLONIAL BOARD



Smart paneling — Room dividers —Unusual decorative effects



PV AERO BOARD

Plain unpatterned hardboards for general paneling, furniture backs, drawer bottoms, etc.

PV Weatherproof HARDBOARD
PV UTILITY BOARD
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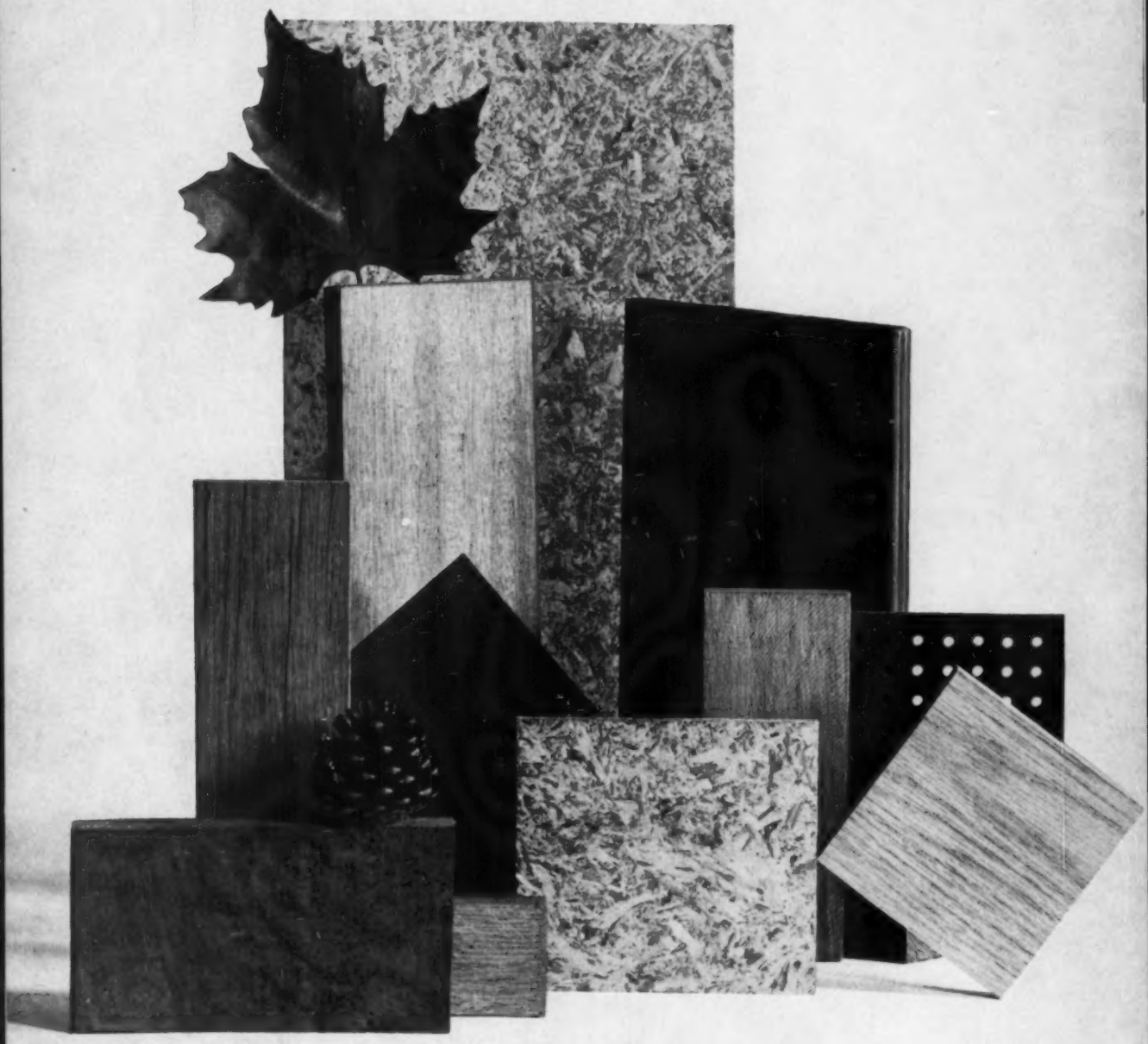

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WOODWORKING SCARFING PATCHING

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The Lumberman, July 1959

Board Industry Outlook is Favorable

By DEAN F. SHERMAN, Editor

A NEW CYCLE of expansion is starting for the board industries. The next five years may see triple the capacity over present levels for particle boards, hardboards and insulation boards. The past two years have seen a leveling off without any distinct growth—but it is a growth industry—not spectacular like plywood, but steady growth.

Much has been learned the past few years about merchandising, better production methods and markets. High on the list for consideration by basic lumber manufacturers within the next five years will be some type of board. They are taking a more careful look at which type of board is best suited for their species, volume and markets.

BOARDS TAKE SALES and merchandising staffs, research and promotion. Each company does its own job so far. There will be strengthening of selling and research by both hardboard and insulation associations. Particle board producers are still unorganized. Products vary widely and there is yet no orderly approach to much needed standards. It is difficult to state that there is any single type of particle board which is better than any other in all aspects, since each type of board is finding use. Manufacturers will need to take stock of progress periodically, reviewing product uses, where it is going in the future and for long range planning.

MORE QUALITY is being built into most types of boards. New faces, thicknesses and applications are being formed. Trend is toward more prefinishing and packaging ready for application. More and more combinations are being adopted using hardboards, softboards, plywood and metals. New decorative faces are widening markets. Product developments are helping to offset invasion of U. S. markets by imports which can, and do, undersell manufacturing costs in this country. Imports remain a big problem—and with board as all other industries—they are vitally affected by our foreign policies, taxes and spiraling costs of labor.

THE MERGERS of larger operations will result in increased production of boards as these companies come together to gain broader timber base and increase capital for development and lower manufacturing costs. The pattern may be followed by smaller basic wood producers on community or area basis. It is all part of the trend pattern to increase product base, secure greater dollar return from each board foot of wood.

PANELIZED CONSTRUCTION is growing and component systems are rapidly taking form. All these broaden the market vistas for boards as they seek to reduce the in-place cost of house construction with better quality homes.

BOARD PRODUCTION IN U. S. (in millions of square feet)

	No. Plants reporting	Basic thickness	1957 output	1958 output
HARDBOARD	14	⅛-inch	1,556	1,635
	Four plants will be added by end of 1959 in addition to large Masonite expansion. By end of 1960, procuction should be at the 2.5 billion sq. ft. level.			
PARTICLE BOARD	50	¾-inch	183	250
	Increase to 300 million sq. ft. is expected by 1960 with addition of new plants.			
INSULATION BOARD	21	½-inch	2,687	2,789
	Though down from 1955's output of 2,990 million sq. ft., steady increase has resulted in past three years. By 1960, it should be up to 3 billion sq. ft.			

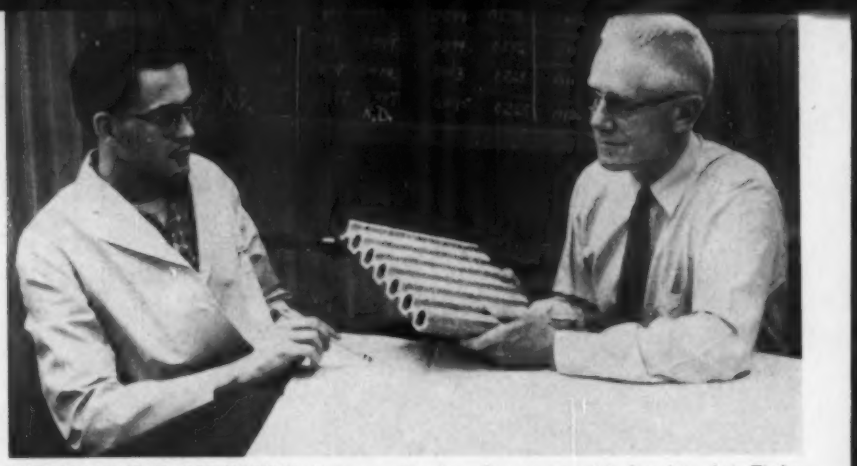
Hardboard with printed walnut grain covers many of the walls of an executive office in Vancouver, B. C. It blends with soft tones of the modernistic floor and contemporary office furniture. This product of Anacortes Veneer, Inc., Anacortes, Wash., is another example of how board products are finding an ever increasing use in today's living.

Staff photo by Erick V. Peterson

By WILLIAM H. SCHEICK
vice-president in research and

J. T. CLARKE
Wood technologist

TIMBER ENGINEERING CO.
Washington, D. C.



AUTHORS CLARKE AND SCHEICK discuss merits of an European particle board in their Timber Engineering Co. office in Washington, D. C.

Continued Growth in Particle Board is apparent as the industry enters era of wide development in new products.

The accurate collection of statistics concerning the particle board industry has been a difficult task because the industry itself does not have a central association. This problem is further complicated by the accelerated expansion during the past few years. Based on information obtained by the Timber Engineering Company, through its close affiliation with particle board technology, we believe, to the best of our knowledge, that there are 52 plants in the United States at the present time.

Classifying these plants by method of manufacturer, either extrusion or flat press, we find that there are 34 flat press plants and 18 extrusion plants. All the plants in the West sell on the open market while in the East we find some captive operations. Practically all the extrusion plants in the East are captive plants of the furniture industry. In addition some of the flat press plants are also captive.

The flat press plants generally are large capacity plants; and, therefore, produce most of the particle board in this country. These plants utilize splinters, shavings and flakes of various sizes or combinations of these as the basic material, whereas, the extrusion process plants primarily utilize a splinter type particle.

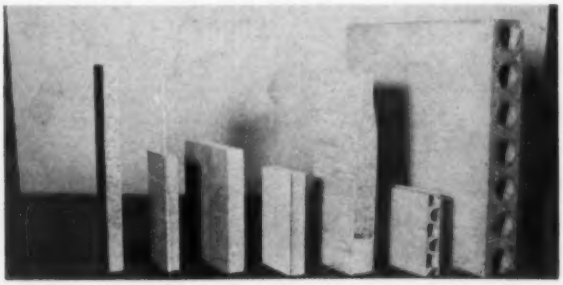
RAPID GROWTH now finds an industry with many types of boards on the market. Based on the type of particles used and method of manufacture all can be classified as particle board and each possesses its own distinct characteristics. It is practically impossible to state that there is a single type of board which is better than any other in all aspects since each type of board is finding use.

1958 WAS SIGNIFICANT for the particle board industry. There was a leveling off of new plant construction. There are, however, 4 under construction and indications that several other plants are being proposed and are now possibly on the drawing boards.

Several firms are expected to announce this year that they will build plants. It is of interest to note that Dorr-Oliver Inc., Stamford, Conn., has entered the field as engineers of particle board plants, and that articles have stated that they and Wilco Machine Manufacturing Company plan to construct and operate particle board plants which will be offered for sale.

Last year was also significant for the industry because of the general recession which prevailed throughout the nation. Only one particle board plant is known by the authors to have failed, several curtailed production for a short period of time, but in general the industry as a whole survived the business slump. During this period it was reported that production was extremely variable ranging from one shift per day to full capacity. In the

PRODUCTS. At left, core stock. Items pictured, front row from left: plastic laminate on flat press board; plastic laminate on extrusion board; wood veneer on extrusion board; wood veneer on flat press board. Underlayment and paneling in middle row from left: shaving board underlayment with paper face; three examples of flake board decorative paneling; paneling with wood veneer face. Back row: section of door with



splinter board core. In picture at right are shown product cross sections. They are, from left: 5-ply furniture panel with extruded board core; 3-ply furniture panel with flake board core; 5-ply furniture panel with shaving board core; 3-ply table top, plastic laminated on splinter board core; door; door with corrugated board core; door with extruded board core.

last few months particle board manufacturers have reported that they are operating close to capacity.

IMPROVED PROCESSING toward a better quality product, was the most significant effort made by manufacturers last year. It has been reported by some, particularly manufacturers of flake-type boards, that equipment such as flakers and driers were overrated in capacity and that the flake yield from wood was lower than estimated. Most of the new plants experienced extended shake down periods. Most of these problems have been solved by co-ordination between plant personnel and equipment manufacturers.

Urea-formaldehyde resin is still used as the binder by most manufacturers; a few use phenolic resin. Recently Roddiscraft, Inc., announced that a phenolic resin adhesive would be used in their board produced at Arcata, Calif.

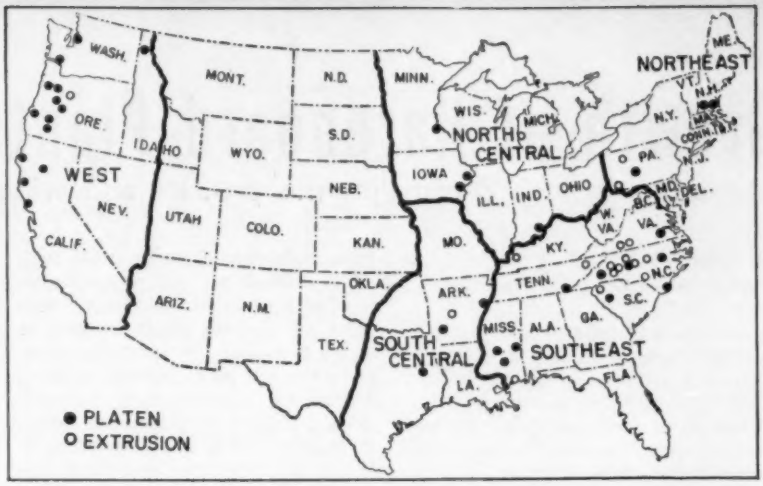
Manufacturers have improved their current products and added new board items to their stock. As a few examples, Granite Board, Goffstown, N. H., is now making several grades of boards using smaller particles than were previously used. Gray Products, Inc., Waverly, Va., is producing an all shavings-type board in addition to the all flake board that it produced initially. Pacqua Board, Inc., Dillard, Ore., has advertised it now has a particle board flooring tile in additon to its other particle board products.

MAJOR USE for particle board at present is for corestock, mainly by plastic laminators and furniture manufacturers. On the West Coast particle board is finding a major market as floor underlayment. Other uses have been for paneling and doors.

There seems to be no pattern that a particular type of board is finding more acceptance for use as corestock than any other. This, of course, depends on what type of board is available in a given area, and competitive costs. In some areas where shaving-type, splinter-type and flake-type boards are available it has been observed they are all being used apparently satisfactorily for corestock.

Research in the field of particle board is being conducted by universities and public laboratories. Many have expanded their facilities. Their studies seem to pattern around investigation of the effect of particle geometry, effect of different species of wood phenomena of adhesion.

Many wood industries have depended upon the adhesive companies for research. This holds true for particle board and the resin companies are concentrating on improvement of their present binders. A few private laboratories likewise have entered the particle board field. For example TECO maintains a particle board pilot plant which is available to assist the industry with product improvement and development work.



MAJORITY OF PLANTS are in northwest and southeast. The northwest runs heavily to flat press, the southeast is nearly equally divided on flat press and extrusion.

LACK OF PRODUCT STANDARDS is a major problem facing this industry. One investigator has classified boards in this country into roughly a dozen board types. The variation in properties between these types has lead to confusion on the part of the consumer. In some cases variability of properties, even with a board from a single manufacturer, has made the consumer cautious and reluctant to us particle board.

There is a strong need for the industry to get together and establish self regulating minimum standards to assure the consumer that the quality of board he buys today will be uniformly good and properly designed for the intended end use. This is not an impossible task, but it must be done by the industry itself. It cannot depend on government agencies or other organizations to accomplish this work. Once a standard or probably standards are established, and they will be, then they must be enforced by the industry.

PARTICLE BOARD is of real interest to the home building industry. At a recent meeting of leading home builders and architects, conducted by TECO and NLMA, the possibilities or structural products resembling particle board were frequently mentioned by the participants, usually in the sense of "blue-sky" thinking.

SUGGESTIONS WERE MADE that particle board could be adapted to the manufacture of one-piece partitions in the form of corrugated or waffle shaped cores with a finish surface easily adaptable to decoration. Other suggestions were made for various structural uses of the material in such form or, even as one builder put it, "delivered in a semi-fluid form and squirted out of tubes like toothpaste" to form extruded structural units.

Impractical as these ideas might seem in the present state of particle board technology, they should serve as an indication to the industry that there are tremendous possibilities ahead through research. The home building industry is constantly searching for new building products premanufactured for adaptation to rapid precision type construction methods on the site, with materials that combine the functions of structure and finish. It seems reasonable to the home builders that wood in re-constituted form promises the possibility of the kind of products they are looking for in volume home building of the future.

The particle board industry of the United States has reached one major plateau of its growth, it is now at that stage of development where the establishment of standards, assured quality, development of new products are becoming more and more important in order for the industry to become thoroughly established and products accepted.

Growth of Hardboard Plants will be determined by economic factors, profits on the product and wider wood utilization.

By JOHN KNAPP,
President, Grenco, Inc., Portland, Ore.

Hardboard production from sawmill residue is one of several methods of increasing the value of the log in the pond. The ability to pay more for logs in relation to one's competitor will, in the long term, determine the survivors in the forest products industry.

Sawmill residues, consisting of slabs, edgings, planer shavings, and sawdust, can all be utilized for additional revenue by conversion into chips, particle board, hardboard, pulp, soil conditioners, and chemicals.

Such additional conversion makes the efficient integrated mill even more efficient, thereby increasing the intensity of competitive pressure on the medium and small operator.

HARDBOARD MANUFACTURING can be broken into two general classifications: wet process, and dry process.

Various advantages have been claimed by both wet and dry processes, both in capital investment, production methods, and product quality. Regardless of which type of process is selected, the cost of the completed plant, wet or dry, will fall within the rule-of-thumb cited. Quality-wise, the product should be evaluated on its own merits—wet process boards have superior properties for certain application, and dry process boards have superior properties for others.

At one time, the wet process advocates claimed substantially lower production costs, and dry process advocates claimed substantially lower investment cost. Over the years, as dry process hardboard plants have become more sophisticated, the spread in capital investment per ton of production has been reduced. Similarly, with some wet process plants utilizing as much as ¾ of 1% phenolic resin, and some dry process plants using as low as 2% phenolic resin, and with lower current resin prices, the spread in chemical costs has been reduced. When all the factors have been considered, there is no significant difference in capital investment and unit production cost for a general analysis as presented in accompanying graphs.

SIZE AND TYPE of hardboard plant to be built depends upon a study of all the factors involved. Under present economic conditions in the Pacific Northwest, we believe that plants with a unit production cost, ⅛-inch basis, of $20 to $25 per M square feet, are feasible.

There are some specialized plants operating at unit production costs higher than $25 per M square feet, and there are some plants in production that use no phenolic resin and have low wood cost with production lower than $20.

In the first case, we have a higher priced product catering to a special market and thereby returning a satisfactory revenue. In the second case, we have a lower quality product capable of meeting dumping prices on foreign hardboard and still maintain a net return.

ECONOMIC HEALTH of the hardboard industry varies in phase with the health of the plywood, insulation board, and other panel material industries. Hardboard is sold in two general categories; industrial board and dealer board. The industrial board prices are lower and the sales volume higher than dealer board.

At the time of this writing, the published delivered price for ⅛-inch industrial grade hardboard was in the $46 to $48 range on a delivered basis. Deducting freight charges and sales commission, the net mill realization price F.O.B. warehouse, is in the range of $36 to $40.

The published delivered price for industrial hardboard may not be the actual delivered price on large industrial orders. Such prices are usually negotiated on an individual order basis and may be up to $10 per M below the published $46 to $48 price list. In such cases, the net mill realization price would be as low as $26 and $30 per M. Such competitive conditions usually are a result of lower available sales.

The lower mill price, coupled with lower production rates to match orders, can bring a hardboard plant down to the break-even point quite rapidly. By the same token, under good sales conditions, the profit margin can be increased spectacularly.

ADDITIONAL HARDBOARD plants are a near certainty, even though there may be overproduction at times. The long term pull is for more per capita consumption as newer markets are developed, coupled with an expanding population which results in a compounding of demand.

A good percentage of increased demand could be taken up by expansion of existing hardboard plants. However, the pressure for increased con-

Costs to Construct Board, Paper Plants, Based on Production

THE PLANT COST, in terms of dollars per ton day of daily production, is a fairly accurate rule-of-thumb method, even though individual plant cost will depend on the site, and whether or not the plant is integrated with existing facilities and common administrative headquarters. In spite of these variables, by the time the plant is completed, and in production, the capital cost falls within the range shown in the table.

Product	Min. Plant Size (Day)	Unit Plant Costs Dollars/Ton Day	Cost of Minimum Plant
Particle board	65 tons	$15,000-$20,000	$900,000-$ 1,300,000
Hardboard	80 tons	20,000- 25,000	1,600,000- 2,000,000
Insulation board	100 tons	30,000- 50,000	3,000,000- 5,000,000
Pulp and paper	200 tons	50,000- 65,000	10,000,000- 13,000,000

The extreme range in the case of insulation board is caused by the degree of subsequent manufacturing facilities. The board plant for the production of large insulation panels can be built for $3,000,000. The additional equipment for insulation tiles, roof decking, coating, and re-pressed hardboard can add an additional $2,000,000. Insulation board in full size sheets, such as the old-time "beaver board," can hardly be sold under today's competitive conditions.

version efficiency at the sawmill level will result in new hardboard production on the West Coast.

This pressure for existence at the sawmill level will ultimately change the economic yardstick utilized for plant construction. Rather than basing such a plant on increased anticipated profits from the investment, the decision may be ultimately based on a break-even operation in order to survive in the race for log supply.

FEASIBILITY OF A HARDBOARD PLANT is determined by the cost of the investment, unit production cost and net realization price at the mill. Such proposals are usually calculated on the basis of the rated mill production.

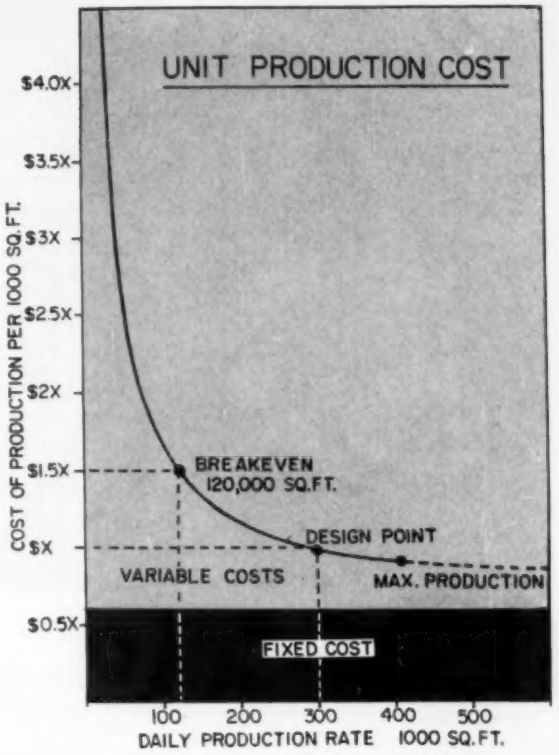
Lower production rates due to either lack of sales, reject board production or down time, force the unit production costs to increase at a rapidly increasing rate.

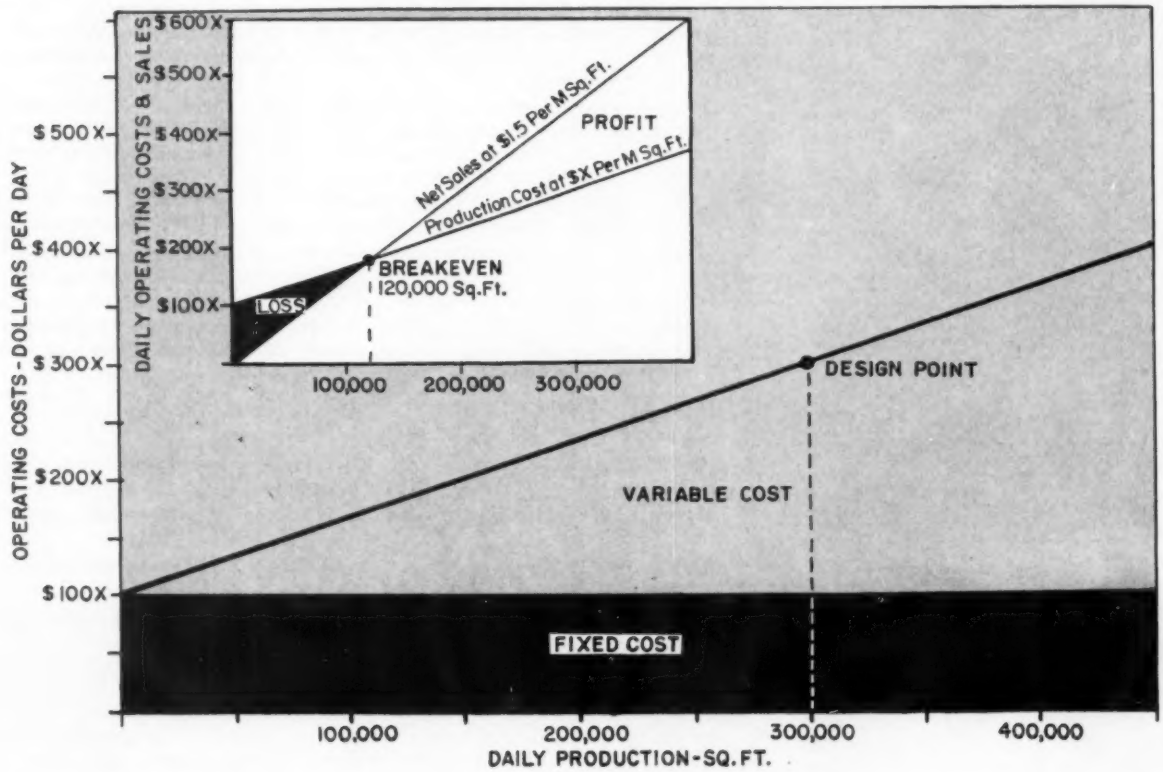
This rate of change in unit production cost is illustrated in the accompanying graph.

Fixed and variable costs shown are the reverse of the fixed costs used in accounting procedure. This is because we are looking at cost per 1000 square feet of hardboard in lieu of daily operating costs. One must consider that for each square foot of hardboard produced there is included in its cost, regardless of the production rate, a fixed amount of wood and chemicals plus other costs such as refiner horsepower, refiner plant maintenance and other items where cost history has been developed in terms of 1000 square feet of production.

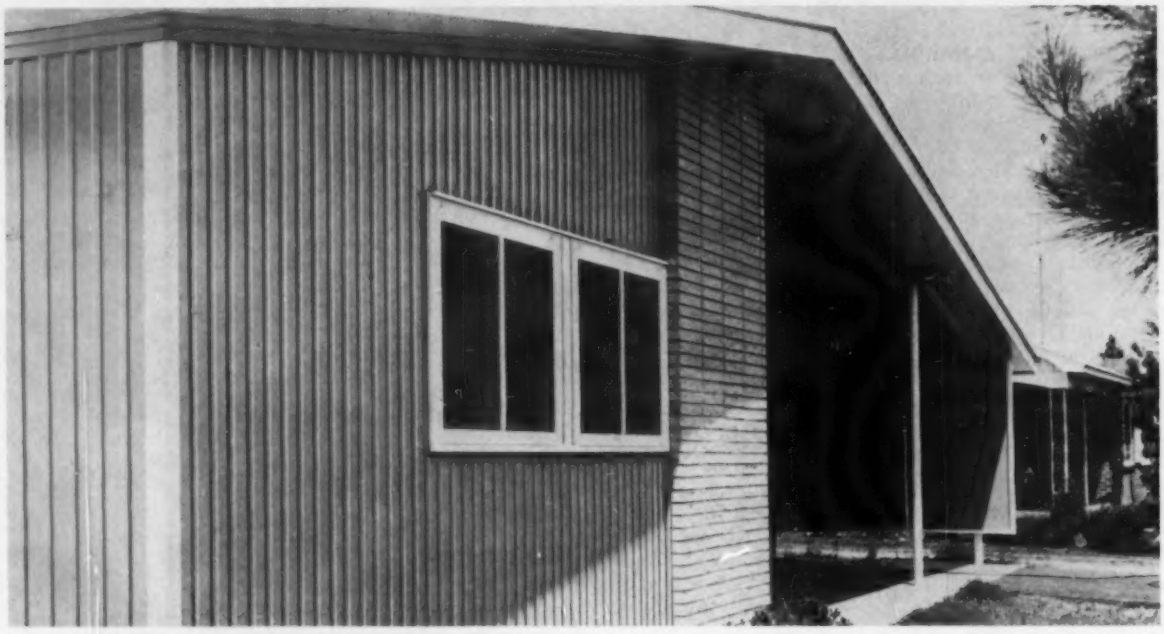
DAILY OPERATING COST shown below is figured in reverse of cost-production ratio in above graph. Regardless of output there are expenses to be met, even if there is no production. This is the more general curve which is also utilized to graphically show the profit and loss figures as illustrated in the unshaded area.

Although figures in the chart below are used in cost analysis, the unit production cost curve above is of immediate assistance to the mill manager. Curves for each type of board produced can be developed for any particular mill. The production cost per 1000 square feet is immediately known for any production rate.





House of Hardboard utilizes panels as structural members,



HARDBOARD AS A BASIC BUILDING MATERIAL was introduced in a research house built under direction of the National Association of Home Builders Research Institute. Called the NAHB Research-Masonite House, the unit erected at Knoxville, Tenn., was developed in cooperation with Masonite Corp. The completed house is pictured above.

Instead of conventional stud framing, erected on the job site and then insulated and covered inside and out with surfacing material, the research house was component panel perimeter walls.

The 4-inch thick walls consist of seven layers of material, including paint, which the manufacturer says will last 20 years, in contrast with the 13 or 14 layers in the wall of conventionally-built houses. The 4x8-foot panel units went up quickly. They have an attractive hardboard panel for the exterior and a woodgrained hardboard panel for the inside surface. Three inches of insulation, an aluminum vapor barrier and lumber framing members were used between walls.

Exterior of component walls is Masonite Sunline siding, distinctive for its performed integral ribs which appear at 4-inch intervals. It is also available with ribs spaced eight inches apart.

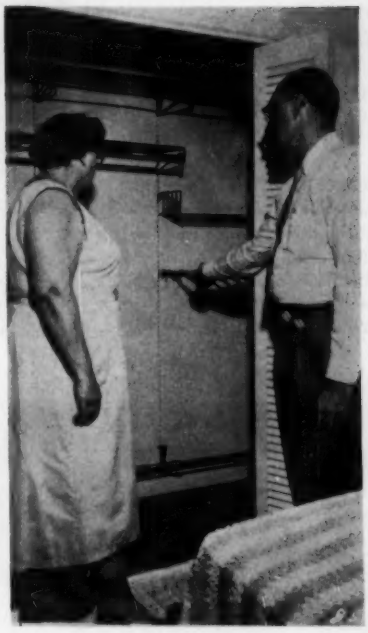
Interior skin of wall is Masonite Misty Walnut. This woodgrained hardboard needs only an on-the-job coating of clear varnish, shellac or plastic and wax.

DOORS REACH THE CEILING in the research home. They are faced with Masonite Dorlux, have various advantages claimed for them:

- Better ventilation resulting in lower heating and air-conditioning costs. Air is not trapped above the door as in standard units.
- Superior appearance from a design standpoint, making the rooms appear much larger.
- Lower construction cost, averaging about $12 per door, due to elimination of headers.
- Elimination of a trouble spot above the door, a usual place for cracks to develop in standard plaster construction.

Doors are hung conventionally on three hinges. Space of 1½-inches at bottom of the door permits passage of air when the doors are closed. Eight-foot doors with hardboard surfaces in another NAHB Research house at South Bend, Ind., are 3-inches wider than the opening. They are attached with special hinges and lock which eliminated the door jamb and usual fitting problems.

promises better homes, erected in less time for less money.



CARPORT STORAGE UNIT was constructed of component panels having an exterior of Masonite Sunline siding and an interior of ¼-inch peg-board strong enough for hanging power mowers or outboard motors.

The 8-foot door simplifies removal of ladders and other large equipment. Doors this height can be built simply by covering a framework of 2x2-inch lumber with a tempered hardboard ¼ or 5/16 inch thick.

Coordination of the style with that of the house assures a pleasing overall appearance.

WALL STORAGE and WORK AREAS such as this bedroom desk and shelf arrangement, can be set up quickly on a new interior wall system. Known as the Masonite Panelok System, it consists of hardboard panels separated by perforated steel splines on which objects can be suspended. Features include:

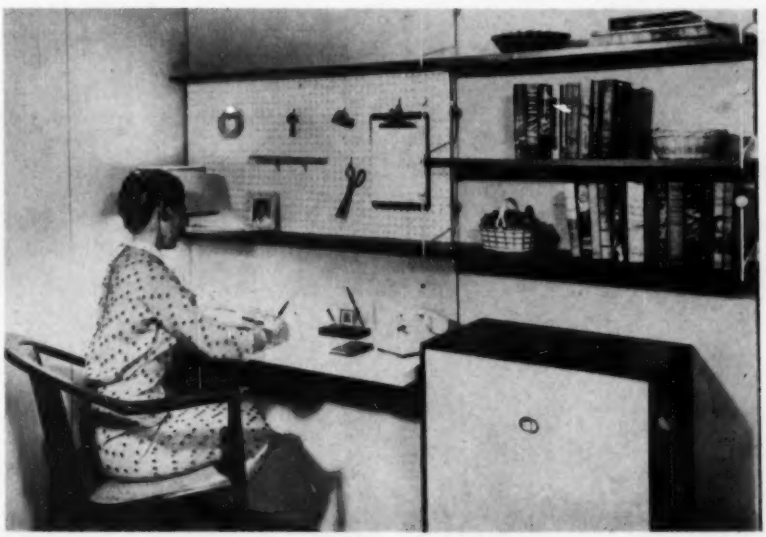
- Functional walls for remodeling and modernization.
- Can be applied to existing walls, studs or masonry.
- Consists of hardboard panels slotted at ends to receive metal lock strips spaced at 24-inch intervals.
- Lock strips support panels and a variety of Adjust-A-Bilt shelf, cabinet and other accessories are available.

The Panelok System consists of ⅞" wide x 8' long Adjust-A-Bilt slotted steel lock strips AP91 and AP92 and 1 foot, 11 inches wide, ⅞-inch thick and 8-foot long Misty Wallnut Panelok, not grooved; and Standard Panelok, not-finished not-grooved.

MORE CLOSET SPACE is possible through Masonite Duowall construction which makes full use of the walls for hanging clothes and other storage items.

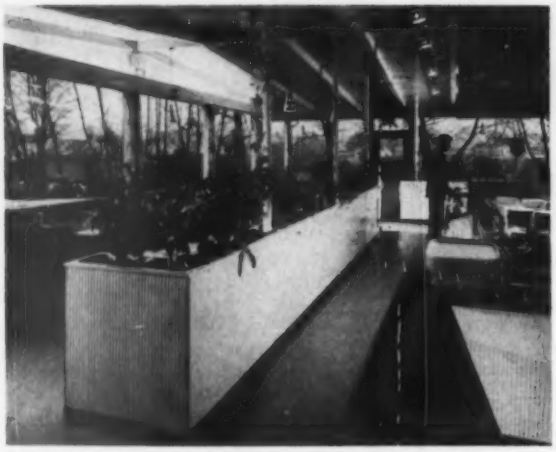
Key to organized storage is the wall structure, using slotted hardboard panels two feet wide with metal lock-strips separating them. The metal strips, perforated at 1-inch intervals, provides support for shelf and wall accessories. Especially designed fixtures intended for closet storage are used.

Fittings can easily be inserted in, or removed from, the metal lock-strips, or splines, so that the fixtures may be suspended from the walls at any height. Scientific studies have been made by the developers of the system to determine the number and types of fixtures needed in various width closets.



BOARDS IN USE

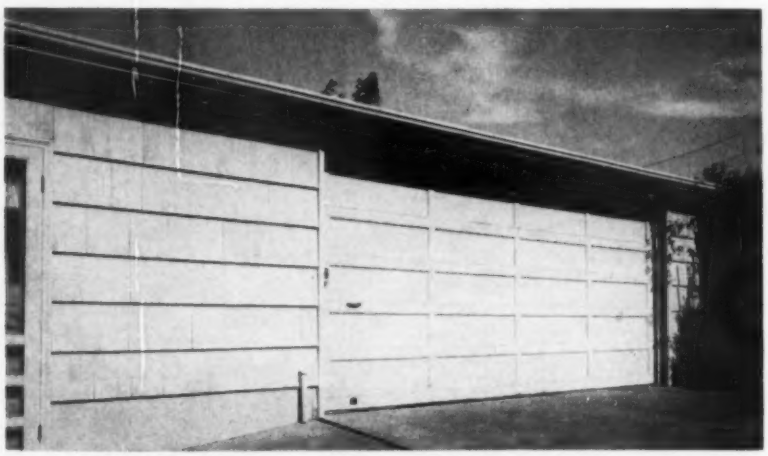
PANEL SIDING is available in horizontal pieces 12-inches wide, pictured here, or in vertical grooved pieces. It is prime coated at factory on front, back, ends and edges.



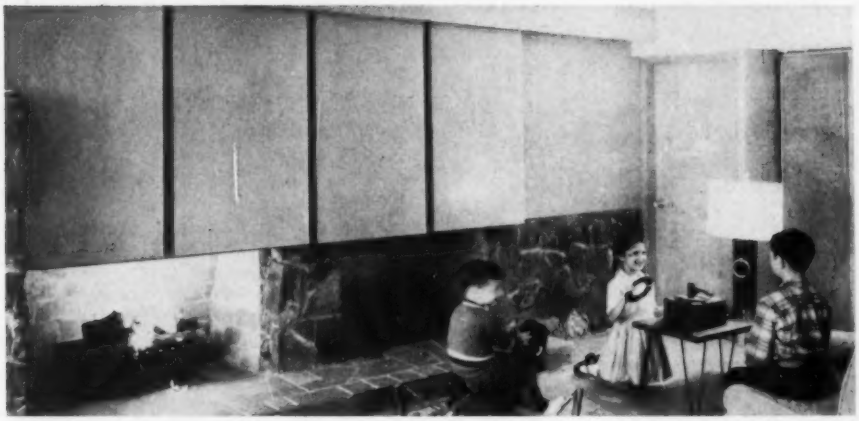
CORRUGATED HARDBOARD on walls, counters and planter in restaurant helps in visual control of space.

FANCY FACE for insulation board is ¼-inch prefinished hemlock. Body of decking is multiple layers of insulation.

WOOD GRAIN panel, in walnut or oak finish, is available in many patterns.

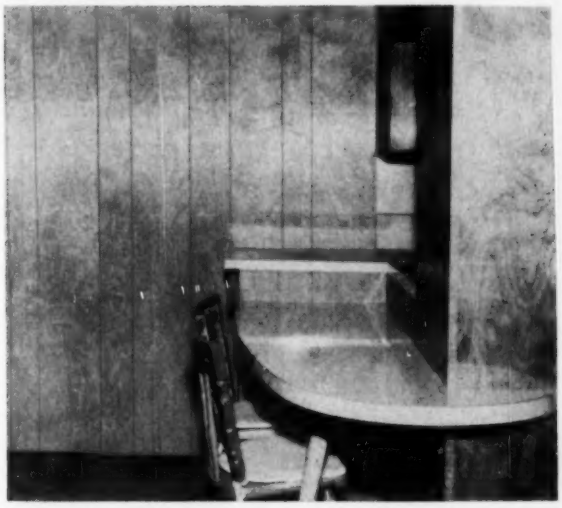


GARAGE DOOR PANELS are taking increasing amount of hardboard products. Panels are very durable, are easily finished, provide clean, attractive appearance.



SEPARATED PANELS on fireplace wall are used to secure a decorator effect. In this application, panels were colored stained to provide adjunct to general decor.

COLONIAL BOARD is applied directly over studs. Nails are placed on hidden joint so they do not show.



PREFINISHED veneer-covered particle board dresses up kitchen. Only finish waxing is required on panel.

DECOR TILES in open beam roof construction provide sound-proofing and attractive appearance. Bevels are painted to mute joint lines between tiles.

PLAYROOM makes wide use of particle board in sliding doors.

BOARDS IN USE

PEGGED WOOD PLANKING appearance is achieved on party room walls, ceiling with fiberboard product.

PANELS ARE COMBINED in office: standard panels on upper walls, ribbed hardboard in lower section.

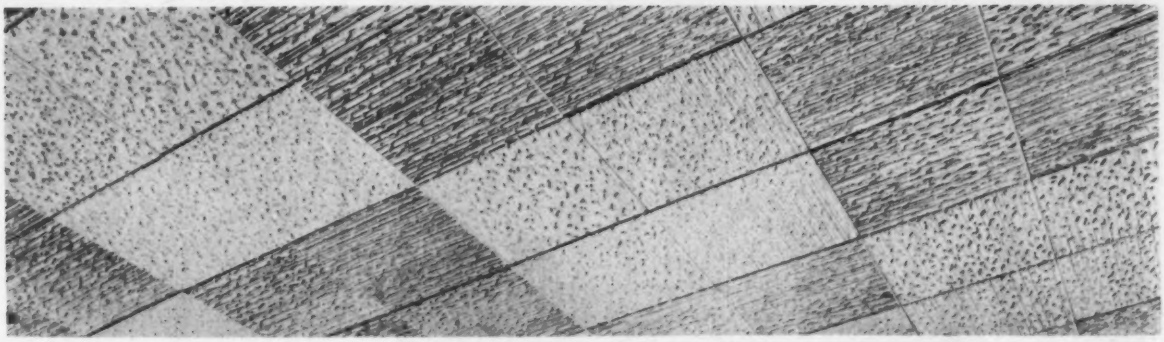
PERFORATED HARDBOARD provides ideal material from which to prominently display merchandise.

CORRUGATED BOARD creates contrasting wall of deep light and shadows.

PERFORATED HARDBOARD in school is used for book display. Its use in cloakrooms allows easy moving of hooks.

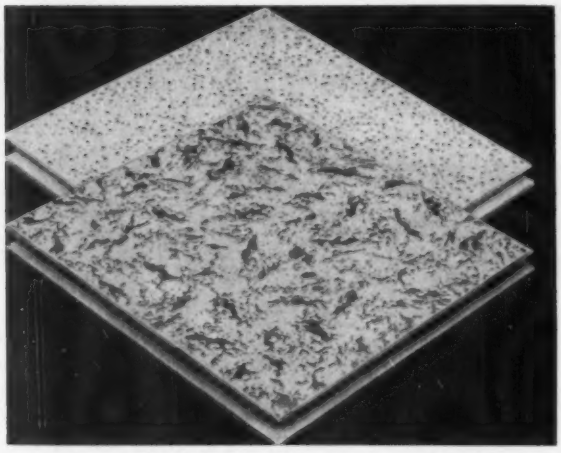
WOOD GRAIN board is grooved in random widths for interesting pattern.

NEW FACES IN BOARDS



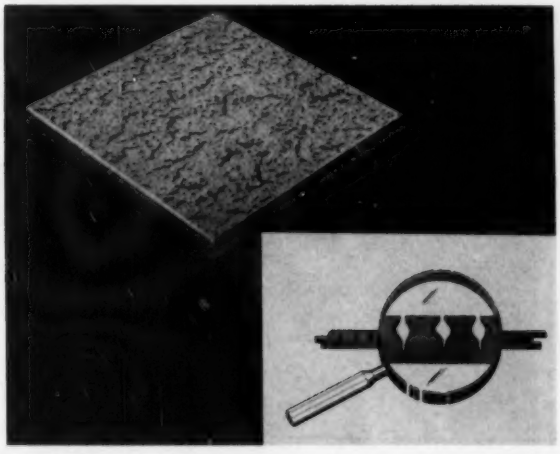
STRIATED SURFACE on acoustical tile provides attractive appearance where applied in parquet, diamond, mosiac or other patterns. The 12x12-inch tile is produced in two thicknesses: 9/16 and ¾-inch, has beveled edges.

Simpson Logging Co.



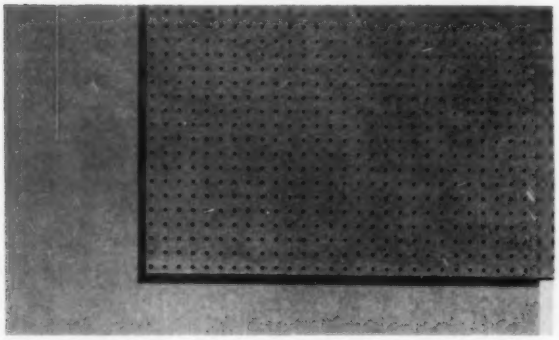
3-D AND METALLIC CHIP faces on acoustical tile offer new design possibilities. Golden Mist, top, features printed chips of metallic gold and rust interspersed among pale gold flecks. A mist-like effect results. Sandrift, bottom, achieves a 3-D effect with two neutral light gray shadings highlighted by metallic flecks of reddish gold.

Armstrong Cork Co.



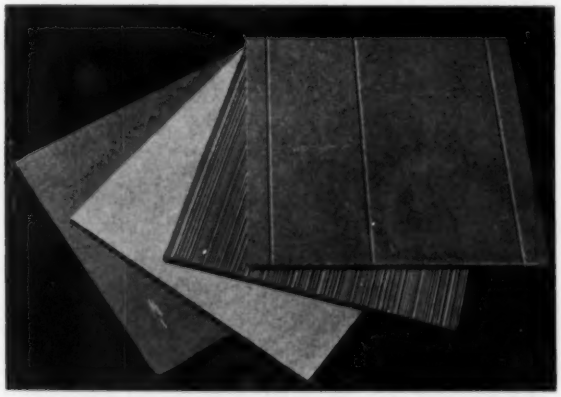
FISSURED STONE appearance features new tile. Pin point perforations that flare out in bell-shaped cavities beneath surface absorbed about as much noise as drilled tile.

Wood Conversion Co.



DRIFTWOOD FINISH board has ivory tone that allows the blond color of panel to show through. The prefinished board is manufactured in Vee-plank and Vee-square design, in a smooth panel and in a perforated board with random or scattered pattern. Panels are ⅛ and ¼-inch thick. The baked-on finish resists abuse and makes for easy cleaning. Matching colored nails are supplied.

Evans Products Co.



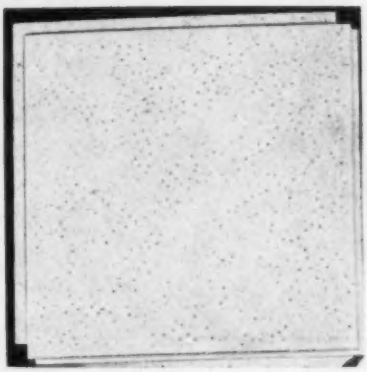
WEYTEX hardboard line has been extended to include the above, from left: prefinished tempered hardboard; prefinished standard hardboard; striated standard hardboard; V-grooved random plank hardboard. The new faces join the current Weytex line and the Weybase and Weylite lines which encompass both standard and tempered boards in a wide variety of thicknesses and panel sizes.

Weyerhaeuser Timber Co.

NEW FACES IN BOARDS

NEW THICKNESSES have been developed for the Versaflake line of hardwood flakeboard. Wide use is being found for the board among furniture makers and cabinet shops. Thicknesses are ½, 5/8, ¾, ⅞ and 1 inches in panels 56x98 inches and 56x196 inches.

Weyerhaeuser Timber Co.

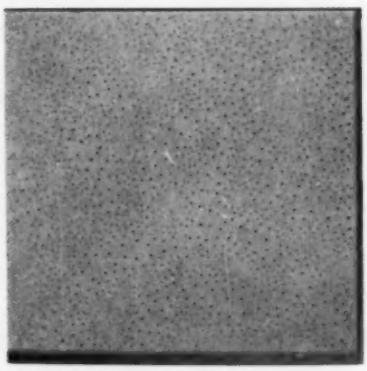


METALLIC CHIPS in a silver color add highlights to Silver Cushiontone. The chips are permanently set and are processed to guard against tarnish.

Armstrong Cork Co.

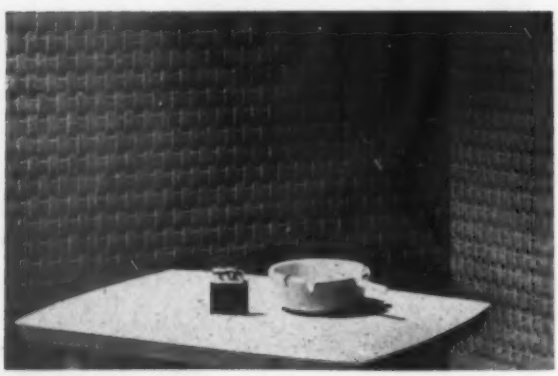
WALNUT GRAIN is photographed on high density, resin impregnated fiber-overlaid hradboard to provide a high quality wall panel. The panels are available V-grooved or plain with V-groove butt joints. The fancy hardboards are produced in 1/10, ⅛ and ¼-inch thicknesses. Studies are underway to use cherry grain and possibly others.

Anacortes Veneer, Inc.



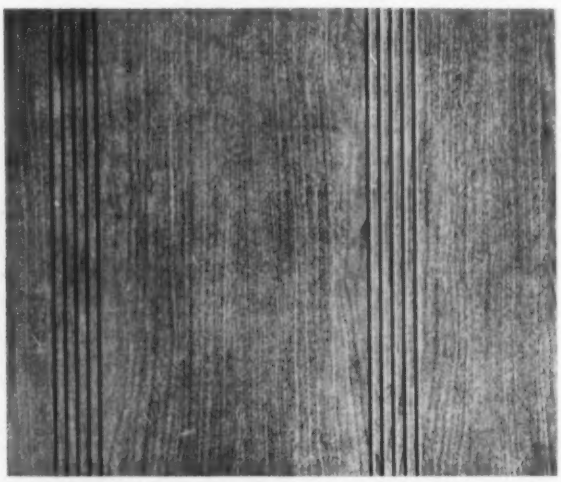
VARIED-SIZE HOLES punched in the surface of Nu-Wood Constellation acoustical tile virtually trap sound that engages the surface. Panels are 12x12 inches.

Wood Conversion Co.



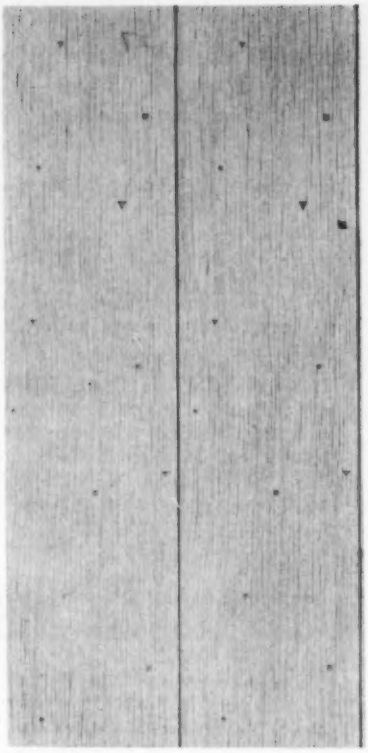
BASKETWEAVE HARDBOARD provides attractive surface for walls, cabinets, displays and room dividers.

Simpson Logging Co.



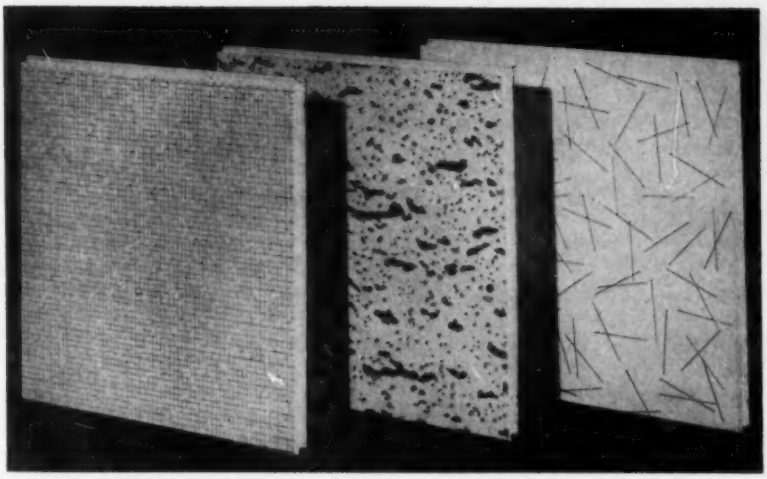
WOODGRAINED hardboard panel, Misty Walnut, is factory finished, has groups of five shallow grooves running vertically at intervals of 16 inches. Besides offering a decorative touch, the grooves serve as nailing locations.

Masonite Corporation



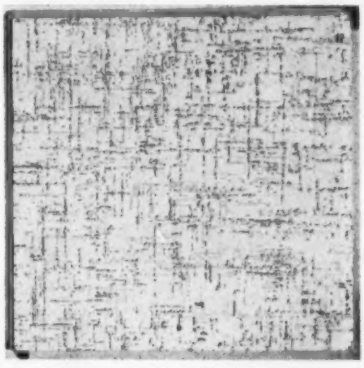
RUSTIC PANEL serves as both insulation and building product. Temlok plank is made in 1x8-foot panel. Beveled T&G joint hides nails and staples.

Armstrong Cork Co.



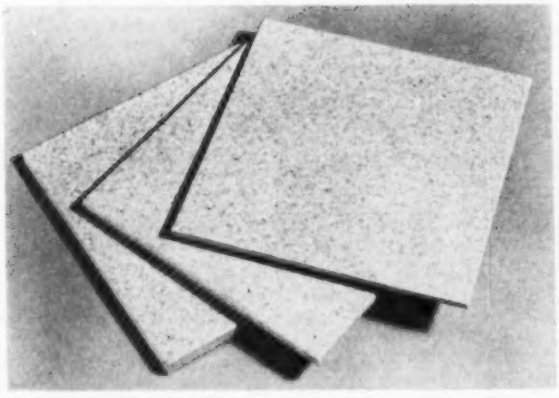
NEW FIBERBOARD FACES in Barretone line include, from left: Tattersal for traditional decor; Fissure to produce effect of travertine stone facing and Sparkler for contemporary interiors. Tiles are T&G'd, factory painted.

Barrett Division, Allied Chemical Corp.



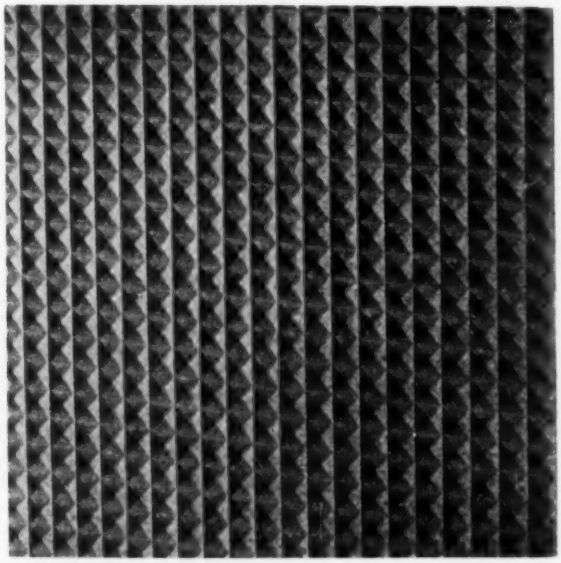
TEXTURED TILE decrobord is made in many variety of colors: gold on ivory, silver on white, gold and gray on white and 3-D fissure print. In the plank pattern colors include gold and brown on ivory, gold and brown on dust rose, gold and brown on buckskin tan and dark green and silver on antique green. Ceiling tile are 12x12 inches; wall plank is 12 inches wide, 8 feet long.

Johns-Manville Corp.



VERSABORD particle board is manufactured in thicknesses of 3/8, 1/2, 5/8, 3/4 and 1 inches in a panel size of 48x96 inches. Quality control practices produce a caliper-correct thickness, constant density and smooth finish. Applications are in construction and cabinet work, both instances where the board's screw-holding characteristics are desirable. Major construction application is floor underlayment.

Weyerhaeuser Timber Co.



COUNTERPOINT hardboard imparts decorative accent to walls and cabinets.

Simpson Logging Co.

Flapreg Gets Face Lifting to develop boards more adaptable to

This resin-and-wood flakeboard developed at the Institute of Technology at Washington State University at Pullman, Wash., first came into being with limited uses, but within the last year a wide variety of new uses have been developed for Flapreg.

According to Dr. George Marra and John Talbott of the Institute, the original Flapreg was too heavy (1.4 density), too hard for certain uses and too costly. By varying the amount of resin and modifying the manufacturing process, they produced a number of boards that can now fill many needs in the home-building and light construction industries.

The basic process can be modified in many ways to produce material designed for specific end uses.

By varying only the degree of resin impregnation and the density, a very wide range of properties is made available. This range extends from the ordinary low density, unimpregnated flakeboard to the marble-like quality of the full density, fully impregnated Flapreg.

Another variable which controls properties is the orientation of the grain direction of the flakes. By aligning the grain of the flakes in one general direction, the strength of the material in that direction can be increased relative to the strength across the grain direction.

A way has been found to make, in one pressing, a board having full density, fully impregnated faces over a much lighter core at a considerable saving in weight and cost. The lighter weight core can have any desired degree of resin impregnation depending on the need for dimensional stability in the core.

ANY SPECIES IS USABLE. Flapreg can also utilize peeler cores and small roundwood as well as mill leftovers of odd sizes. Mr. Talbott reports, "Every species we have tried has proved successful in making an

BARK BOARD is shown off by Arthur C. H. Burrows. Overlaid bark boards on table are, from left: rotary-cut Douglas fir veneer, resin-impregnated fiber, Kraft paper and sliced vertical grain Douglas fir veneer.

Douglas Fir Bark

By R. A. CURRIER
and C. H. BURROWS
Oregon State Products Research Center

A new particle board now under investigation at the Forest Products Research Center is made from Douglas fir bark without addition of the usual binding and sizing materials. The process takes advantage of natural resin and wax components inherent in Douglas fir bark. Development of the bark boards has resulted in considerable interest, especially since the prod-

Waterproof Particle Board utilizes phenolic glue . . . . . additive

Pacqua, Inc., at Dillard, Ore., is adding ingredients to its particle board to secure a waterproof panel or an insect and fungi is repellent board.

The waterproof panel, called Par-Tex is made 100% waterproof by using phenolic glue. A recent use of Par-Tex occured at Harding & Leggett, Inc., fruit packers at Orange Cove, Calif. The board was applied to the firm's coloring room where for several months it was constantly exposed to 88% humidity and 60 degrees temperature. President Harry C. Harding said the Par-Tex shows no sign of buckling or swelling.

A coloring room, incidentally, is where fruit picked early is processed to attain a uniformly bright color.

PAR-TEX WAS SPECIFIED for the building by architect David H. Horn of Fresno, Calif., because its structural strength and dimensional stability permits single wall construction. Erection was accomplished quickly; the plant was in use four months from the start of construction.

The Par-Tex used in the coloring room was not treated with a sealer as originally planned, yet no buckling or swelling has resulted. About 55,000 square feet of the material was used as siding and roof decking in ⅜-thickness for roof decking.

Galvanized nails were used to secure 4x8-foot panels to 4x4 studs on 16-inch centers throughout the building. An allowance of ⅛-inch was made for expansion. Exterior walls were painted with two coats of outside paint.

INSECT REPELLENT BOARDS produced by Pacqua are called IRB boards. The treatment is presently available in Par-Tex exterior board, Par-Wood interior board and Par-Tile wood block flooring.

When IRB is specified, liquid repel-

wider application in light construction.

acceptable board. Light open grain species (such as aspen, cottonwood, alder and vine maple) are the best and as an added advantage they can be flaked in the round."

FLAPREG'S COST VARIES mainly with the amount of resin required for the various thicknesses and densities of boards.

- For the ¾-inch thick full density board, the resin cost per square foot is about 40 cents.
- For the three-layer construction in ¾ inch thickness (laid up in the press in three layers) with the high-density face and back on a low-density core, the resin costs 25 cents.
- For the ¼-inch floor tile with medium density, the resin cost is 12 cents; and the light ¼-inch wall panel which can be made in any of the natural wood colors (or completely black if desired) needs only 7 cents worth of resin per square foot.
- Molded Flapreg ⅜-inch thick for use in chair seats and backs, can be made for a resin cost of 10 cents per square foot.
- Pattern stock, a Flapreg item that can be made in existing board plants, is dimensionally very stable and requires 32 cents per square foot for resin.

FLAPREG TABLE TOP requires no finishing. Scratches and mars can be removed simply and quickly by sanding and buffing.

Particle Board successful in tests. Natural resins provide binder

uct apparently can be produced with conventional equipment at reasonable production costs.

PRODUCTION PROCESS on a laboratory basis from Douglas fir bark briefly is as follows:

- Douglas fir bark resulting from debarking in sawmills or veneer mills is suitable raw material.
- Wet bark chunks are hammer-milled and rough-screened to remove fine material.
- Bark now in particle form is dried to a moisture content of 10-20%.
- Dried bark is screened to obtain desired particle sizes.
- Required amount of bark particles are sprinkled by hand onto caul plates retained by a forming box.
- The assembly is placed in a press and subjected to adequate heat and pressure. Pressing conditions do not vary appreciably from those used for particle board.
- After release of pressure, the caul plates are stripped from the consolidated bark board.

RESEARCH IS UNDERWAY to determine effects on the bark board of such variables as size of the bark particles, pressure applied, and moisture content of bark at time of pressing.

Only limited data on physical properties of bark boards are available at the present time. These data are presented in the table below.

Property	Range
Modulus of rupture	480 to 7960 psi
Modulus of elasticity	96,000 to 1,578,000 psi
Water absorp., 24 hrs.	2.5 to 14.1%
Thick. swelling, 24 hrs.	1.8 to 13.6%
Linear expansion	0.06 to 0.90%
Internal bond	44 to 164 psi
Screw holding	142 to 305 lbs.
Specific gravity	0.70 to 1.07

Ranges appearing in the table above represent boards made with many combinations of variables mentioned previously. A statistical evaluation of all data is planned.

repels insects

lent is added during the manufacturing process. The chemical penetrates the entire thickness of the board. Subsequent cutting therefore does not expose unpreserved edges.

IRB boards can be worked and finished in the same manner as regular panels. The manufacturer guarantees permanent protection from insects and fungi when the board is used as recommended.

FRUIT IS HEATED at temperature of 80 degrees, humidity of about 88% in room lined with waterproof Par-Tex. Fresh air enters the room every three hours.

Realistic Approach To Particle Board

By PAUL R. WALSH

Particle Board Technologist and Advisor to

The Chemical Process Co., Eugene, Ore.

AUTHOR PAUL R. WALSH, left, discusses operation of Clear Fir Products Co., Springfield, Ore., with plant manager George Mohr.

A new cycle of expansion is starting in particle board which in the next five years may triple the productive capacity over present levels. This expansion is possible because particle board has established itself as a product which will do a job combining desirable qualities and economy for a volume market. Production know how, product acceptance, and profit incentives are combined to make particle board a valuable addition to the forest products industry.

PLANT SIZE is an item which deserves serious consideration. Much has been said in favor of large particle board production systems. On paper, a large plant produces at the lowest unit cost. There can be disadvantages however. Under normal production conditions the disproportionate cost of bigness can be a heavy burden. Study of costs of big and small plants where the cost advantages of each plant are evaluated, places the production cost figures so close together that it is reasonable to assume there should be all sizes of plants.

INTEGRATION of a board plant with a sawmill, plywood or millwork plant which is its source of raw material, represents an ideal condition. Being in close proximity to waste material minimizes fiber acquisition and handling costs. As an example, a sawmill operation of medium size, will easily yield 50 tons of edgings, mill ends, slabs and shavings which can be applied to particle board production.

Most raw material resources divide pretty evenly into equal amounts of solid wood and hogged or shavings fractions. It has been thought that chips and planer shavings were inferior to precision cut flakes, but studies of particle geometry show that each type of fiber has good qualities which the other does not possess.

Blending flakes with chip particles or shavings results in a product with advantages of each type of fiber while minimizing the defective qualities of each. Proper combination of fibers can improve board quality, increase utilization of waste resources and broaden the range of board properties.

The quantity of waste yielded should be studied carefully for each plant. In some instances this study can lead to some improvements in manufacturing technique which reduces the amount of wood available for board manufacture. Such increases in efficiency should be made before a final tabulation of the form and quantity of raw material is compiled.

An integrated board plant has many advantages resulting from the fact that it can share service units, maintenance costs, management and sales costs with the parent unit from which it obtains its waste. This factor can be important in competitive board markets. In return, the particle board offers an added dollar income per unit volume of basic raw material. Those who have learned the benefits of selling chips can appreciate this point.

CONTINUOUS AUTOMATED PRODUCTION techniques are ideally suited to manufacture of particle board. The machinery for this system of manufacture is usually quite simple. However like most specialized automatic production systems, each element is important and must be engineered and installed properly. Such items are fiberizers, driers, resins mixers, felt forming machines and presses must perform to close specifications.

Good products are manufactured by adhering to basic rules. The raw material sources which yield good particles are veneer scrap, hogged wood, mill ends, slabs, edgings, round wood and planer shavings. After the wood is reduced to particles it is dried to a uniform moisture content. Next the fiber is precisely metered and mixed with appropriate resins and waxes and felted into mats on caul plates roughly the size of the finished board. The mats are conveyed to a multi-opening hot press where under high heat and pressure, the mixture of particles and chemicals is consolidated into a rough board. After conditioning it is trimmed and sanded to finished size.

There can be many variations of this basic system. Such things as layering of particle elements, addition of other chemicals besides resins and waxes and novel pressing techniques are examples of such possibilities.

CLOSE CONTROL over each phase of the operation is essential. After proper particle preparation, maintaining a stable moisture content is important. Not only is adequate control critical for board quality but it can adversely affect the quantity of production. Frequently press cycles have to be extended because the moisture content is not held within acceptable limits.

ADHESIVES are usually the largest single expense of manufacture. Selection of a proper adhesive is obviously important because it constitutes the primary bond of the product. The industry is indebted to adhesive manufacturers for the tremendous amount of research which they have devoted to the problems of board resin formulation. As the industry has matured, the need for more durable, versatile and less expensive resins has become apparent.

An all out attack on this problem is now being made and it is hoped concrete results may soon be forthcoming. One of the big achievements has been setting the goals. Now that some of the problems have been defined, it will be interesting to observe what modern scientific tools and techniques can accomplish.

Particle quality, moisture content, and adhesive formulation should be adjusted to make the most of the hot pressing operation. The application of heat and pressure to a mass of wood, water, resin, wax and other materials brings into play a wide range of dynamic forces and chemical reactions. Being sure that these effects are working for the desired result and not against, is of considerable importance.

Large plant investment to provide an adequate production system is not always necessary, but a thorough appreciation of the production problems is mandatory. For such items as the hot press, fiberizing machine and felting and conveying equipment, an adequate investment in good machinery is essential. There are a number of engineering firms, equipment suppliers, and research institutions who can provide the needed information on plant equipment. Since industry has not yet supplied plants one a so called "off the shelf" basis, acquiring these services will save considerable trouble and money.

TREMENDOUS POTENTIALS are opening now for well engineered boards. In the past the big market has been its use as a core for veneer and plastic in furniture and cabinet manufacture. The stability, uniformity, and economy of the product is an improvement over previously used cores. Particle board as presently offered, could be improved in its laminating and machining qualities. Those who succeed in making such improvements will enjoy a stronger market and a better price.

The second largest market is for the boards' use as an underlayment for tile and linoleum in home and apartment house construction. Its qualities of being flat, smooth, economical and easy to apply are gaining an expanding market. Some improvement in edge and surface characteristics to prevent chip out and subsequent lumping in the mastic coating, would overcome a rather serious objection.

Of current interest is the increasing application of particle board overlaid with hardwood veneer in kitchen cabinets and sliding doors. Production of veneer-faced flake boards and embossed patterned wall boards is increasing in volume. Several plants are devoting their production exclusively to these items. With the exception of the decorative face and fine overlay production, the big volume of particle board is used in applications where it is hidden from view. It serves the function of a core or underlayment and this has been a limitation on the products marketability.

In order to reach the really big markets available, particle board should be paintable and durable enough to withstand some severe exposure. Fabrication of an exterior board is not yet economically feasible, but the development of filler sealers to surface particle board and thus make it paintable has been accomplished.

With the prospect of paintability, the market possibilities are expanded. Any product development which increases the utility of particle board economically has market potential.

Research cost associated with most of the developments so far has been small considering the results. Particle board is just beginning to exploit the vast range of opportunities. Flexibility should be engineered into the plant design to take advantage of new product ideas.

MARKETING is perhaps the most critical area deserving attention today. It seems to be the least understood. Most lumber, plywood and similar wood products are distributed by a conventional merchandizing method while particle board distribution requires a more direct selling effort. The manufacturer must provide salesmen who can organize distribution and educate the distributor and his customer. This situation adds a burden of sales cost for a new producer but it has its compensations in that he can carve out his own market. With the variety of special needs that the consumer has and the many forms that particle board can take, a producer has a unique opportunity to build a strong distribution system.

If a firm is prepared to provide adequate financing and exercise good business judgment, it can derive considerable benefit from producing particle board.

PORTLAND CEMENT BINDER is used in new aspen board produced by Bord, Inc., Englewood, Colo. Board is formed into 2x8- and 4x8-foot sheets in thicknesses of from 1 to 3 inches. Major uses are roof decking and wall sheathing. It has high fire resistance, good insulation properties, is vermin proof and is easily sawed and nailed. *Photo courtesy U. S. Forest Service*

Hardboard Plant Due North Carolina

The Riverside Manufacturing Co. division of American Package Corp. will construct a hardboard plant at Conway, N. C., Edwin P. Brown, company president, reports.

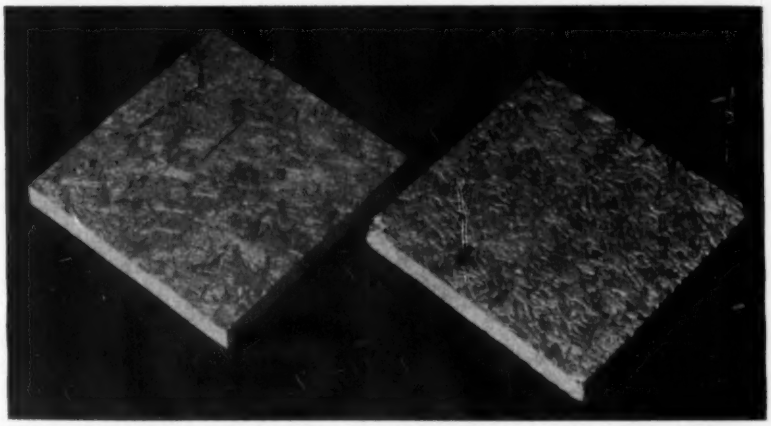
The plant will operate on residue from five company-owned wood working plants in the area and on hardwood pulpwood purchased on the open market.

Industrial Development Co., Tacoma, Wash., is engineering the plant. Most of the heavy equipment has been purchased.

When in operation early in 1960 the plant will have a capacity of 100 million square feet a year. Initial production will probably be 70 million square feet a year.

U. S. Gypsum Promotes

Graham J. Morgan has been elected executive vice-president of United States Gypsum Co. He has been with the firm since 1939 and most recently served as vice-president and assistant to the chairman of the board. Henry C. Bear is new vice-president of merchandising.



ENGELMANN SPRUCE BOARDS are being tested by the U. S. Forest Service. The program was prompted by an excess of beetle-killed Engelmann spruce in the White River National Forest in Colorado. Samples shown here are: flakeboard at left, hammermilled particle board at right. No difficulties were experienced in processing the boards. The material flaked well and, with one minor exception, the boards met all strength requirements. *Photo courtesy U. S. Forest Service*

World Reports

Particle board, fiberboard and hardboard are big elements in world trade.

Production of Particle Board by Countries of the World

Figures given in thousand metric tons.

	1957	1956
Germany (Western)	234	162
United States	.....	125
Belgium-Luxembourg	8	90
France	71	49
Canada	17	30
United Kingdom	34	29
Italy	26	26
Austria	.....	23
Spain	3.0	21
Germany (Eastern)	23	19
Netherlands	.....	13
Denmark	.....	8
Finland	7.2	7
Czechoslovakia	6.1	5
Turkey	.....	4
Sweden	.....	3
Mexico	.....	3
Brazil	.....	3
Japan	12	2.7
Colombia	.....	2
Uruguay	.....	2
World Totals	690	705

(Includes other minor producers not shown above.)

Source: UN-FAO.

Production of Hardboard by Countries of the World

Figures given in 1000 metric tons; suggested formula for converting to square foot basis is 1 metric ton equals 2939 sq. ft.

	1957	1956	1955
United States	553	500	470
Sweden	430	370	353
Australia	91	85	80
Germany (Western)	89	91	80
France	76	66	59
Finland	73	66	72
Canada	72	69	62
Norway	60	55	54
U.S.S.R.	56	40	32
Belgium	45	43	39
Poland	36	41	22
Austria	34	35	34
Italy	32	34	34
Germany (Eastern)	32	26	19
United Kingdom	25	22	21
Czechoslovakia	24	23	24
Argentina	.....	18	15
Japan	23	18	15
New Zealand	12	12	14
Spain	11	11	11
Ireland	11	9.3	9.1
World Totals	1,920	1,745	7,640

(Includes other minor producers not shown above.) Source: UN-FAO.

World Trends in Particle Board Industry

The United States is at the point of ousting Germany from its position of world's top producer of particle board, according to Dr. Karl Borgin, of the Institute for Forestry and Wood Technology, University of Stellenbosch, South Africa.

America's productive capacity is 700,000 cubic meters a year, compared to Germany's 600,000, he says.

The industry, he went on to say, is still experimenting with new types of equipment ranging from debarkers to cutters, mixers, presses and machines for after-treatment of the surface of the boards. He foresees many new automatic and continuous presses being put into operation.

"We shall also witness the development of small-scale but highly efficient plants to be used for special purposes or where raw material and demand are limited."

"HIGH-FREQUENCY HEATING" will be used much more than now. This heating density of a board can be considerably reduced.

"High-frequency heating is already being used in one single-opening press and one four-opening press in Holland. It Italy there is one eight-opening press; in France two eight-opening presses; in Switzerland one four-opening press and in Sweden one new press under construction.

As an example of high-frequency efficiency one small industrial press can only make 80 boards per 24 hours with conventional contact heating, but 360 boards per 24 hours with high-frequency heating. The pressing time for doors by the Curvi-press method, used in France and Sweden, is about three minutes.

Dr. Borgin gives the number of plants ranging from three in Austria to 42 in Germany. In Belgium, flax is used as raw material. Some of the German plants produce 60-80 tons a day.

In Germany and Scandinavia he found particle board readily accepted by the furniture trade. The furniture trade is also introducing it extensively in Britain.

THE BUILDING INDUSTRY in Europe is also using an increasing amount of particle board for sliding doors in closets and wardrobes and a special outlet for the board is being found in the shipbuilding industry.

"In Norway," he says, "a new particle board plant was not put into full operation before it was certain that the quality of the boards would fulfill the strict requirements of the Norwegian shipbuilding industry."

Dr. Borgin estimates the present day world production of particle board is 225 world-wide plants at more than 750,000 tons (more than one million cubic meters). World production by 1960 will exceed 3 million cubic meters.

Average Production Capacities of Fibreboard and Particle Board Mills by Regions (1956)

Region	(Compressed and Non-compressed) Fibreboard	Particle Board
	Tons per Year	
Europe	19,300	4,200
North America	50,400	2,500
U.S.S.R.	17,800	.....
Oceania	23,000	.....
Asia	1,700*	1,200
Union of South Africa	28,400	7,700
Latin America	15,000	1,400
World Average	23,600	3,500

* Figure influenced mainly by the many small mills in Japan.

Exports & Imports of Hardboard by Leading Countries of the World

Figures given in 1000 metric tons.
1 metric ton=2939 sq. ft.

Exports	1955	1956	1957	Imports	1955	1956	1957
Sweden	260	300	340	Utd. Kingdom	171	149	188
Finland	61	49	60	Netherlands	56	64	76
Norway	27	36	39	U. S. A.	21	22	14
Belgium-Luxembourg	35	28	28	Belgium-Luxembourg	20	18	18
Austria	23	20	15	Canada	21	30	26
Canada	43	35	36	W. Germany	20	30	42
W. Germany	17	14	13	Denmark	25	23	25

Report from England

By ARTHUR E. JONES

United Kingdom Correspondent, The Timberman, The Lumberman

Britain's 1958 sales of fiberboard were roughly 700 million square feet (excluding particle board) with import figures of 457 million square feet of hardboard and 46 million square feet of insulation board. This was a reduction of 50 million square feet on the imports of 1957. Forecast for 1959 is for a substantial increase.

Depressed economic conditions in Britain influenced sales in 1958. Several insulation board plants worked short-time, falling in one case to a three day working week.

A PRICE WAR between European producers on the U. K. market brought the price down to $26 per thousand feet until, in March 1959, European, South African and British producers agreed on minimum selling prices. The new basic price is $28.

The great bulk of hardboard, 321 million square feet was imported from Sweden. The second largest supplier to Britain was South Africa with 44 million square feet, an amount larger than in 1957, despite a glutted market. American exports were 69,000 square feet of hardboard and 57,000 square feet of insulation, plus a small quantity of laminated wallboard.

British production of fiberboard last year was 200 million square feet.

Particle board production last year was 35,000 tons for the U. K.

A new particle board factory was opened near London by British Plimber, while a $700,000 extension was completed to the Weybridge factory of the Airscrew Company and Jicwood. This will increase the output of Weyroc by 7 million square feet a year.

A new particle board factory is to be built in 1959 at Inverness, in Scotland, at a cost of $300,000 by Michael Nairn and Co., Ltd. Softwood thinnings will be used as the raw material. F. Hills and Sons, Ltd., of Stockton-on-Tees, are now making particle board under the Kreibaum system for sale; previously the firm had been confined by its license to manufacturing for its own use only.

ON THE U. K. MARKET there are now 220 boards offered for sale with 70 new boards added during 1958.

Experiments were made in the shipment of particle board in one-ton packages. Lower handling charges and reduced damage losses resulted.

Hardboard with a priming coat incorporated during manufacture made its appearance during the year, the first type of this board coming from Celotex. Other manufacturers are now producing a similar board. It is thought that soon the bulk of the insulation board sold on the U. K. market will be treated against fire risk.

Report from Finland

At the end of 1958, there were four particle board plants in Finland. The first of these has been in production for three years. The total annual capacity is 120,000 cubic meters.

Of the present output of around 50,000 cubic meters, predominantly of the thinner board, approximately 50% is exported.

According to the U. S. Government, which supplied the information reported here, the future of Finland's particle board industry is bright because of rising demand in Europe and increasing domestic consumption.

Report from Japan

By KENJI SAKAI

Correspondent, Tokyo, Japan, The Timberman, The Lumberman

The outstanding new product in Japan is insulation board.

Through technical cooperation with the U. S. insulation board industry, a high-quality domestic board was first manufactured in 1958 under the brand names Daiken Insulation Board and Golden Insulation, the latter a product of the Nagoya plant of Nippon Hardboard Kogyo K. K. This firm is a sister company of Nakamura, a name well-known in America. Both the Nagoya and Okayama plants have an annual production potential of some 15,000 metric tons.

A particle board plant using German Homogenholz machinery was built in 1953 in Hokkaido by Iwakura Gumi. Another plant was built by Nikko Sangyo K. K. in Iwate. One of the new plants plans to export half its output to the U. S. By the end of 1960, the production potential will be 60,000 metric tons annually.

It was in 1954, due to introduction of advanced mass production American techniques, hardboard of excellent quality was put on the market. Since then the development of this phase of the board industry has been steady and more volume of board has been turned out each year. It is said that in 1958, the nation's production capacity for hardboard rose three times as rapidly as in previous years, because a number of new factories began operations. New plants that started producing in 1958 are Daiken Wallboard Kogyo K. K.; Nippon Hardboard Kogyo K. K.; and Tokyo Hardboard Kogyo K. K.

In 1958, the Daiken plant produced S2S hardboard for the first time in Japan, with exports expected to begin in mid-1960. Only a limited quantity of lauan-covered board is being shipped to the U. S. now. A small amount of particle board covered with sen wood is being exported to some Near East countries, with a prospect of increased volume in the future.

Japanese Hardboard, Particleboard & Insulation Board Production

(All figures in metric tons. 1 metric ton = 2,204.6 lbs.)

	Hard-board	Particle-board	Insulation Board
1955	14,938	3,381	4,320
1956	17,788	6,095	6,170
1957	23,285	11,645	8,797
1958	42,396	14,645	9,529
1959	70,000	25,000	30,000

Source: Ministry of Agriculture and Forestry; 1959–estimate.

Japanese Export of Hardboard And Particleboard

(Units: Thousand cubic meters.)

	Hardboard	Particleboard
1957	108	113
1958	1,650	182
1959	4,158	726

Source: MITI; 1959 estimate. These boards are usually covered with hardwood veneer such as lauan and sen wood.

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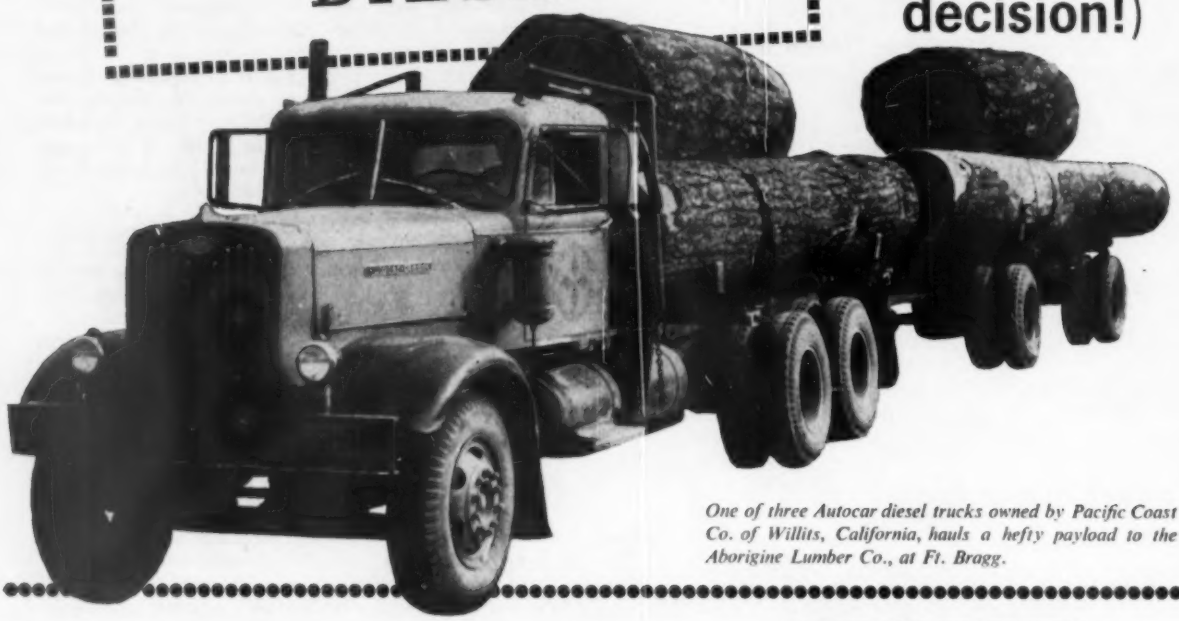

One of three Autocar diesel trucks owned by Pacific Coast Co. of Willits, California, hauls a hefty payload to the Aborigine Lumber Co., at Ft. Bragg.

When Autocar Diesels take to the woods, you can expect your financial statements to reflect greater earnings. That's because Autocar is put together to haul more board feet at less cost, year in—year out. Autocar is a working asset that stays on the job—producing, producing! No wonder it earns more, your Autocar comes to you with the most efficient basic components available anywhere... the finest engine, transmission and axles... working together with Autocar quality construction features.

Yes, you *too* can improve the efficiency of your transportation. See your local Autocar representative for all the facts about this custom engineered truck today!

AUTOCAR GIVES YOU THE FINEST BASIC COMPONENTS, plus more extra quality features:

- **nut and bolt construction for extra strength; longer truck life**
- **balanced propeller shafts to prevent vibration and premature wear**
- **independent transfer steering for stability, safety and handling ease**
- **inexpensive, replaceable bushings at major points of wear**

When you get down to factual comparisons your logical choice is . . .

Autocar
"World's Finest"

Division of
White Motor Company
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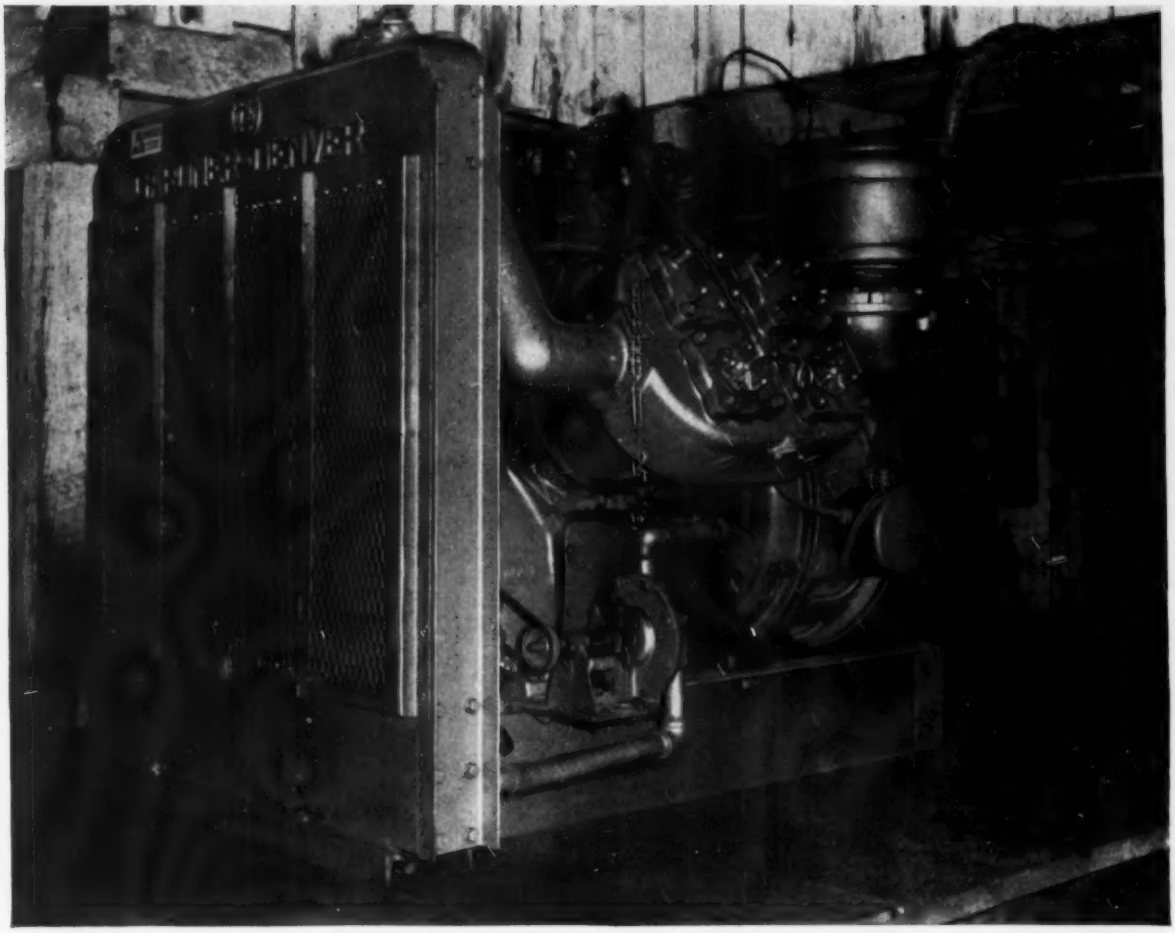
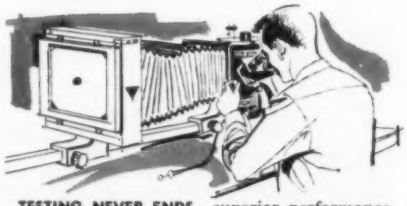


When you modernize with air power, start with this cost-cutter



TESTING NEVER ENDS—superior performance in a product is never an accident. Gardner-Denver men put equipment through its paces, and continually look to improve efficiency and quality. At Gardner-Denver, there's no substitute for men—our 100-year philosophy of growth.

Simply spot this compact, highly efficient WB compressor in a corner of your mill. Bolt it to the floor timbers and it's installed—quickly and inexpensively. Then hook it up and forget it. Years without a major repair is not unusual for this Gardner-Denver machine. Self-contained radiator-intercooler solves all water-cooling problems, too.

Now you've got versatile, economical power that's convenient, easily controlled and—above all—*fire*-safe. There are eight space-saving WB sizes from 142 to 1150 cfm piston displacement. Ask your Gardner-Denver representative.

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Branch Offices: Seattle, Vancouver, San Francisco, Los Angeles, Salt Lake City, Denver and Wallace, Idaho

Brawny Fruehaufs Go Sky, Wide and Crooked!

There's an old lumberjack saying—"sky, wide and crooked". It means "everywhere" and it fits rugged Fruehauf Trailers like it was coined for them. Whether you are toting wood chips, hauling Ponderosa or Douglas out of the back country, or trucking finished lumber, there's an economical Fruehauf ready to handle your job at less cost-per-mile.

There is a wide choice of models for both on-highway and off-highway hauling, plus logging truck equipment to fit your individual needs. So . . . whether you are at timber line or mill site, you can put a rugged Fruehauf to work for you with confidence.

And there's always a Fruehauf Branch close by, for instant service and replacement parts. Fruehauf facilities cut costly down time, boost your profits. The Fruehauf reputation, built over 45 years of serving you, is your best assurance of complete satisfaction.

• • •

Fruehauf rugged corrugated-steel wood chip units are available in lengths up to 40-feet. Mounted on tandem-axles these drop frame units have rear gate dumping for ease in handling chips.

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Check your AIM*... Fidler's does...

Acme Steel Strapping cuts loading time 84%

Acme Idea Man Bob Rosenberg has furnished time-saving ideas to Fidler's and many other companies.

FIDLER'S MANUFACTURING CO., INGLEWOOD, CALIF., looked for a way to cut their carloading time of 48 man-hours. They turned to their Acme Idea Man for suggestions.

A method was worked out using heavy-duty Acme Steel Strapping instead of wood bracing, and the carloading time has been cut to less than 8 man-hours (Idea No. U1-15). The car is draped with steel strapping anchored to the studs in the car walls. Then, steel strapped, palletized units of Fidler's "Kambercore" doors are loaded in the car. A wood gate is put in place, and straps are tensioned and sealed on the face of the gate, holding the doors firmly in position.

Customers prefer this technique, too—the doors arrive in excellent condition, and are unloaded faster.

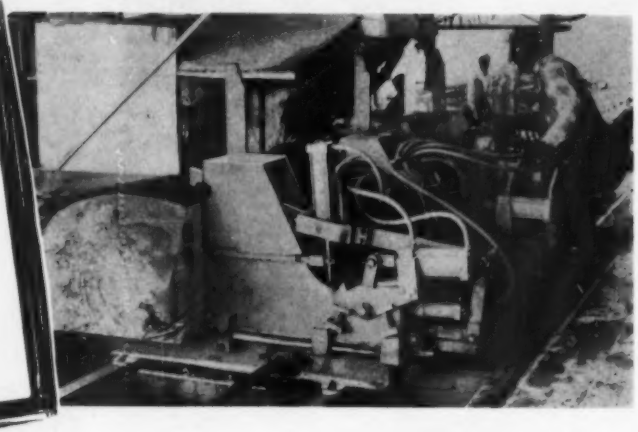
***Check your Acme Idea Man.** His suggestions have saved time and money—and eliminated shipping damage—for many companies. Write Dept. LBU-79, Acme Steel Products Division, Acme Steel Company, 1025 Sixth Avenue South, Seattle 4, Washington. Also Portland, Oregon.

ACME STEEL **STEEL STRAPPING**

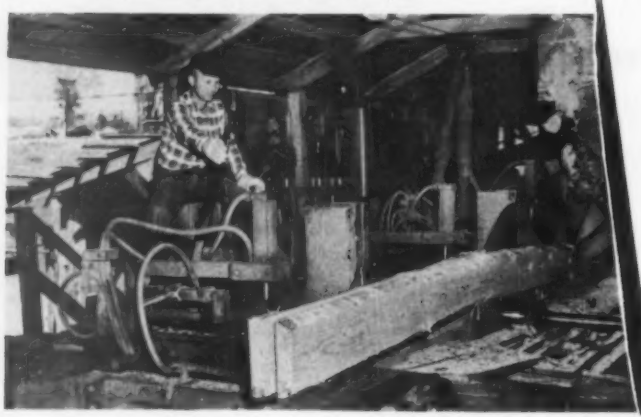
Successful lumbermen speak out for Corinth

"Our Corinth #838 Air Carriage is all that is needed for these pine logs that we have today. It is well-balanced, the dogs are as good as I have ever seen, and are fast. Our sawyer says that it is as well-balanced a rig as he has ever sawn on. He is a man with a lot of experience in large mills."

The statement at left was made by Price Paschal, Price Paschal Lumber Company, Brandon, Miss. Pictured below is the Corinth #838 Air Carriage in operation in the Paschal mill.



The statement at right was made by N. E. Neely, Neely Lumber Company, Bond, Miss. Pictured below is the Corinth #640 Air Carriage in operation in the Neely mill.



"We would like to mention our appreciation for the excellent service our Corinth #640 Air Carriage has given us. In use now approximately one year, it has given a high degree of performance. Our lumber is cut more accurately than with the old carriage. We feel that it is paying for itself through the saving on labor. One man does the work of two."

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AMERICAN SAWMILL MACHINERY CO.
Corinth, Mississippi

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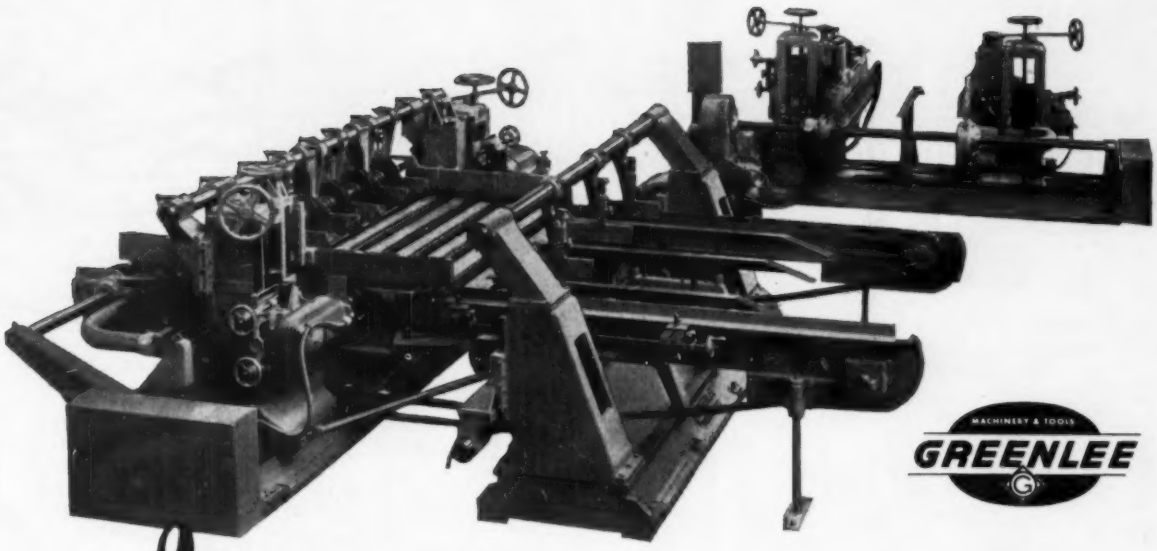

MACHINERY & TOOLS
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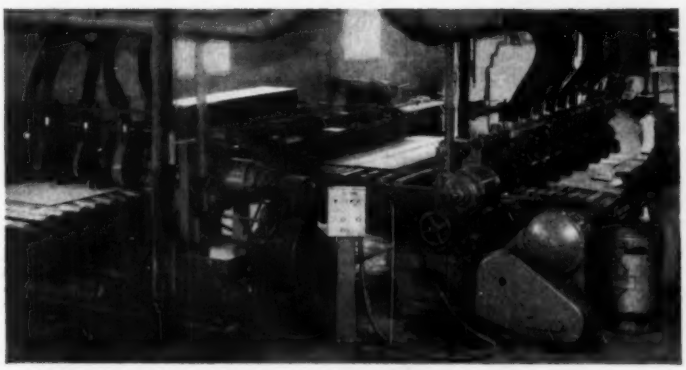
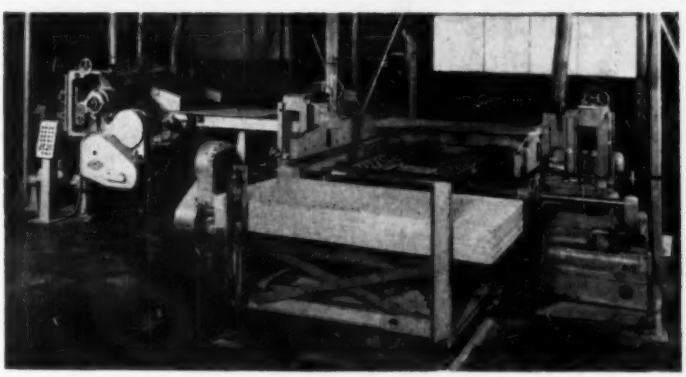
Improve production...lower costs with Greenlee Double-End Panel Machines

Special Panel Machines Size, Split, and Shiplap Insulation Board In One Pass. Edges are shiplapped on the Skinner. The second machine, with a slat-bed outfeed section, has a combination of front lower and rear top dado units that produce multiple strips with shiplap on all four edges.



Slat-Bed Multiple Cut-Up Saws Cut Flat and Curved Particle Board. Equipped with overhead dado cutting units these Slat-Bed Machines with automatic transfer cut both curved and flat particle board with minimum changeover. Feed rates to 110 feet per minute. Operation is fully automatic and accuracy is assured.



High Production Skinner and Cut-Off Saw Sizes Particle Board Panels. Equipped with horizontal hogging units, these machines are primarily used in high production panel sizing. The Skinner Saw has a cartridge type dado unit for panel splitting.

Many variations, in addition to those shown, can be arranged with or without automatic transfer units to meet your panel sizing, splitting, and grooving requirements. Discover how Greenlee Double-End Panel Machines can cut your costs!

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YEAH, WHEN THE SORTERS GET TIRED, PRODUCTION SLOWS DOWN EVERYWHERE IN THE MILL.

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FINE!... LET'S REPLACE OUR OLD LONG ROLLER CHAIN ON THE SORTING TABLES WITH MOLINE'S NEW "SPLIT ROLLER" CHAIN.

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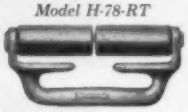

Long Link with Split Rollers

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SURE WE COULD! THERE'S A MOLINE DISTRIBUTOR IN TOWN... LET'S GET HIM ON THE PHONE. HE CAN HAVE THE NEW CHAIN ON ITS WAY IN 24 HOURS.

Moline Mill Chains are triple-tested. For every handling job in mill production, there is a Moline Chain designed and developed to give maximum efficiency... trouble-free performance... and extra long life.

More than 60 years of service to the lumber industry have established the superiority of Moline Chains. They are *triple tested* – each link is hand inspected and gauged... assembled and then "run-in"... stressed to proof strength and shock tested for soundness.

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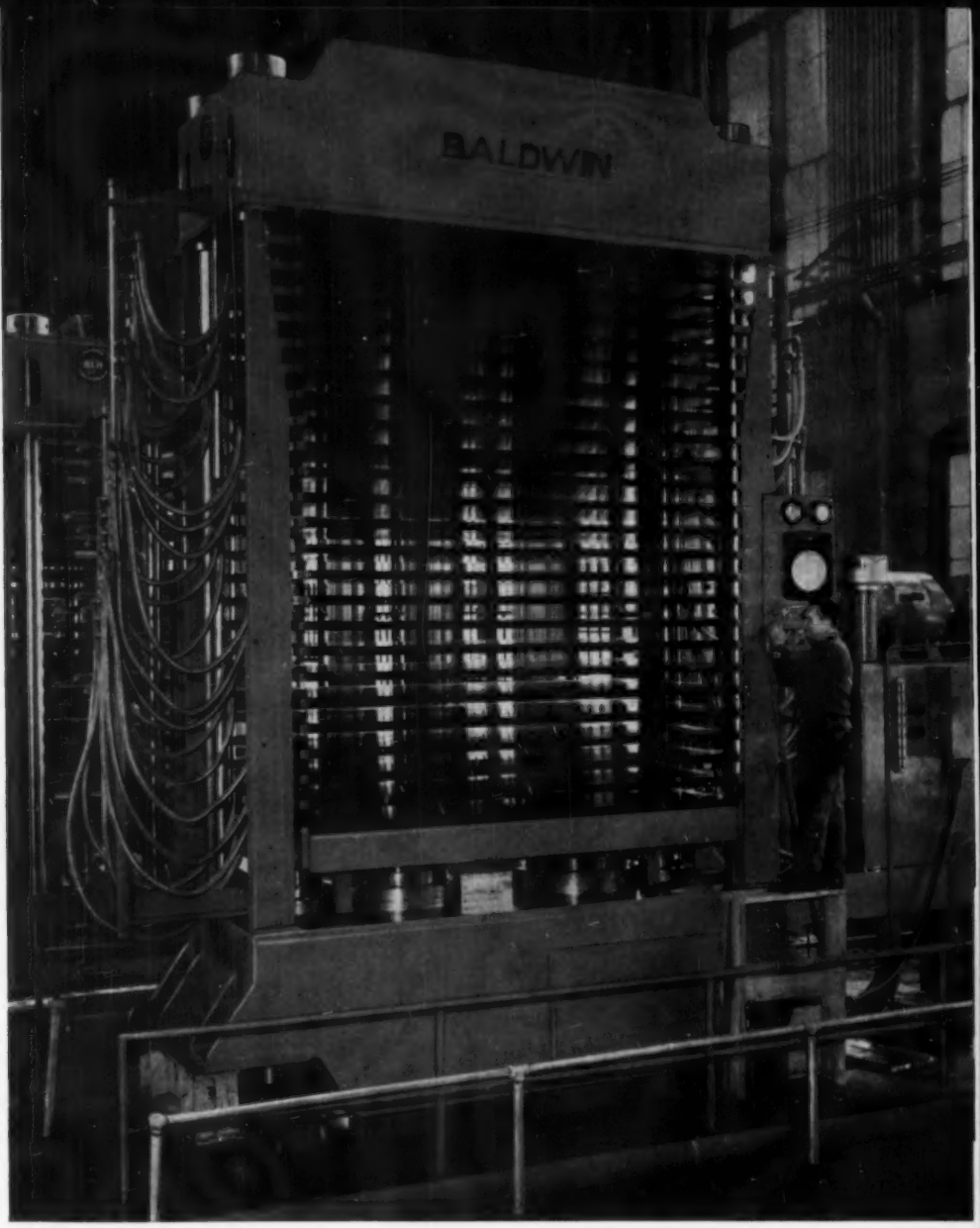
Specializing in the manufacture of chains



Operational checkout of Baldwin 570-ton steam platen press on assembly floor prior to shipment.

Baldwin high-speed plywood presses expand facilities of West Coast lumber mills

Five new 4 x 8 ft. Baldwin hydraulic hotplate plywood presses —incorporating outstanding new features for high-speed, high-quality production—have recently been shipped to four West Coast lumber companies, and four more are in various stages of manufacture. This expansion program represents a joint venture on the part of these firms to meet the ever-increasing demand for top-quality resin bonded plywood. B-L-H's program of stocking components is geared to meet continued expansion with short delivery.

NEW FEATURES OF THESE BALDWIN PRESSES INCLUDE:

- **High-speed closing**
- **Precision controlled opening speed**
- **Uniform hotplate temperature**
- **New bull-nose leading edges to facilitate loading**
- **High-carbon steel plates for longer life**
- **Minimum maintenance costs through improved step hanger and guide bracket design**
- **New single pump circuit with fewer valves**

For full information on plywood, hardboard, particle board and other Baldwin and Hamilton presses, write to Dept. 21-G

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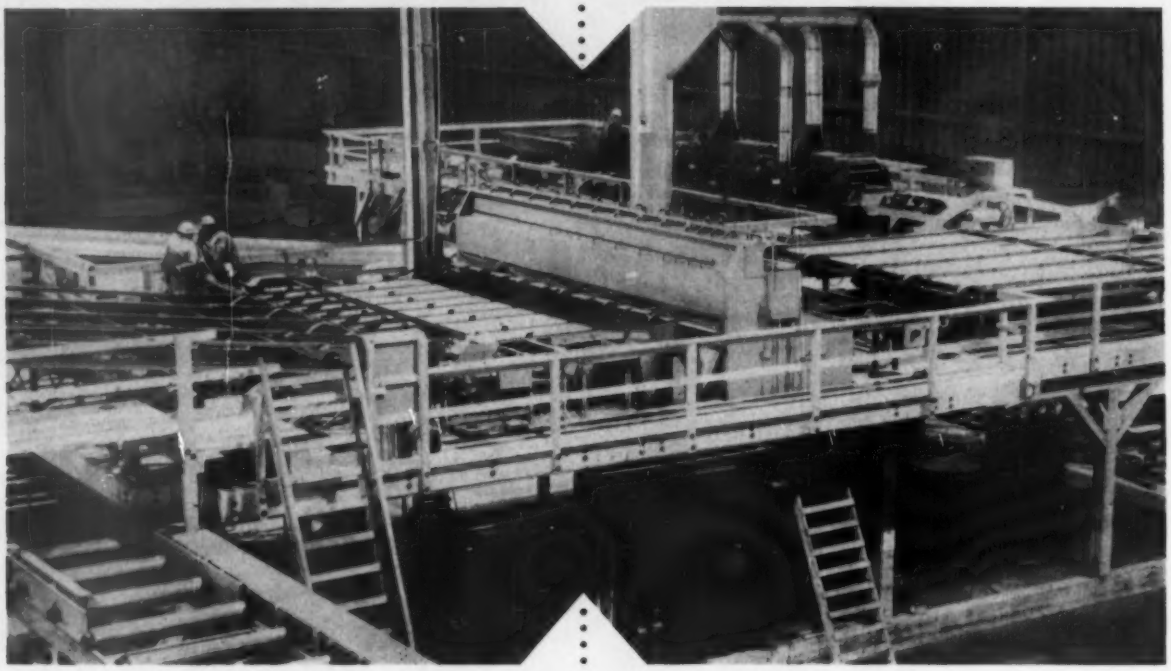
BROOKS-SCANLON INSTALLATION AT BEND, OREGON



Here is the first fully automatic random-length end trimmer that prints and waxes both ends of the boards while they are in continuous forward motion. It's fully automatic. ● Here is speed! Here is *profitable* recovery because every board is trimmed to its maximum marketable length. With this PORTLAND IRON WORKS installation there is no slow-down, no shifting of boards. ● For the newest ideas in low-cost lumber manufacturing, call us. We'd be pleased to help you plan for maximum recovery of your boards and dimensions. Our experience can mean new profits for you.

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experience is our best designer

engineers
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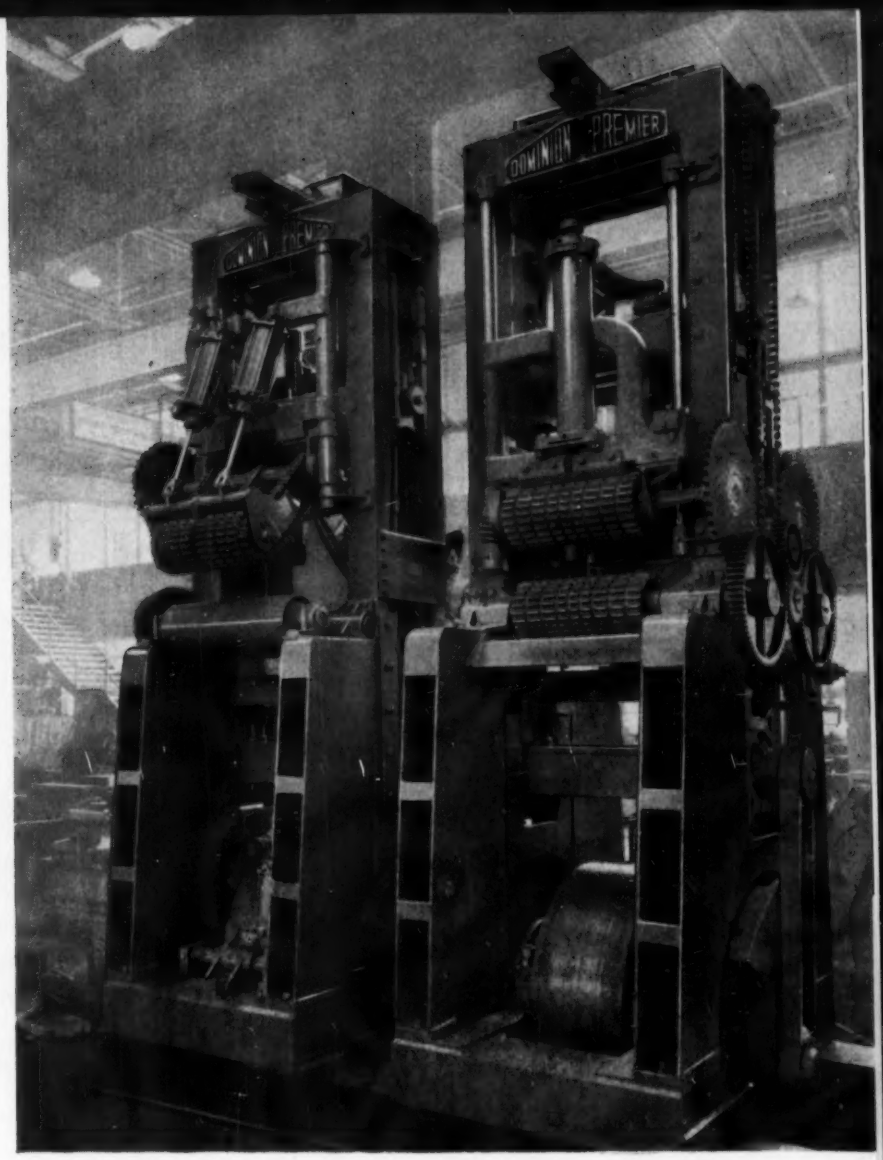
TWO OF A KIND...

for
Increased
Production
Lower
Operating Costs



Either of these gangsaws will give you *increased production*—in some cases as much as 60%. You can *lower your costs* by specifying the Dominion 25" Premier gangsaw best suited to your requirements.

FOR SMALL LOGS AND CANTS (12" diameter or less) the Dominion Premier gangsaw, with split top feed rolls and extra in-and-out feed rollers, cuts two logs or up to four cants at one time. Overhang of top feed rolls makes it possible to cut short logs without usual bounce. Existing single roll machine can be converted to split rolls in a few hours.

FOR LARGER LOGS AND CANTS specify the standard single roll Dominion Premier. Multiple saws cut up to 1⅜" per stroke.

Dominion Premier Gangsaws are made in Canada to withstand North American conditions. Simple design with built in oscillating feature—no complicated adjustments. U.S. Standard dimensions throughout. All steel construction—no cast iron. Immediate service and availability of parts.

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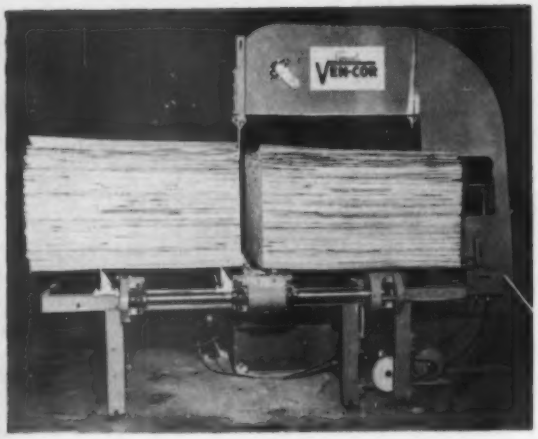
This fast growing, successful manufacturer of new types of machinery for the plywood-lumber industry is now occupying its new manufacturing addition of 10,000 square feet. This new space is of great importance in stepping up deliveries of SWEED machines.

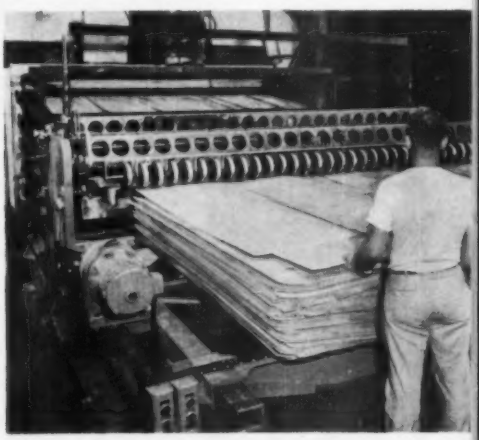


This VEN-COR . . . the remarkable saw for cutting veneer core stock is now being manufactured in ever increasing numbers AND satisfied customers are to be found from Central California to Canada. This simple, sturdy, easy to operate saw makes precise cuts — and is a real labor saving machine.

Brochures available on request.

The SWEED SPEED-FEED is the new cam-activated feeder adaptable to any veneer dryer. This new and versatile "feeder" is arousing interest, not only in Western United States — but in the Philippines, Japan, France and Holland. On May 12, Jeddeloh Bros. shipped the first SPEED FEED out of the U. S. to British Columbia, Canada.

Write for your brochure.



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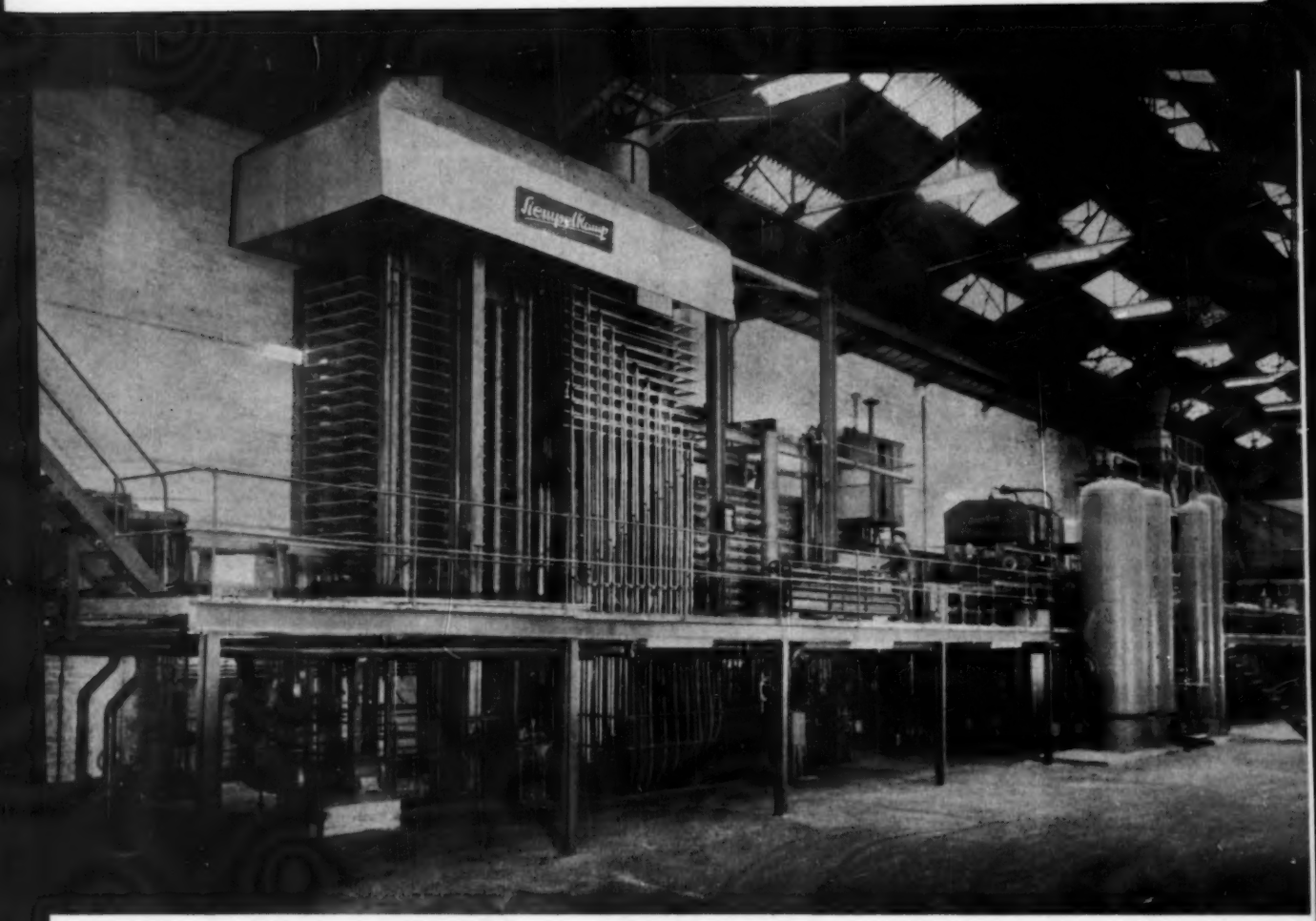

Chip Board and Particle Board Press installation

suitable for:

- All Types of applicable raw materials
- All Manufacturing processes
- All Stages of automation
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LINE BAR

The KLAMATH MACHINE Line Bar is self-contained, heavy-duty, trouble-free. It is equipped with one fluted and four smooth feed rolls with lead toward setting bar, two power driven press rolls, rack and pinion type set works. If desired, press rolls may be provided with an air cylinder for power opening, so that the Line Bar can be used as an edger to split boards from 1" to 24" in thickness. *More detailed information will be sent promptly on request.*

ASK FOR THIS *NEW* CATALOG

Our Catalog carefully describes and illustrates the Line Bar. The full line of KLAMATH MACHINE Sawmill Machinery is described and illustrated in this *new and carefully prepared* CATALOG. A copy will be sent to responsible sawmill operators on request.

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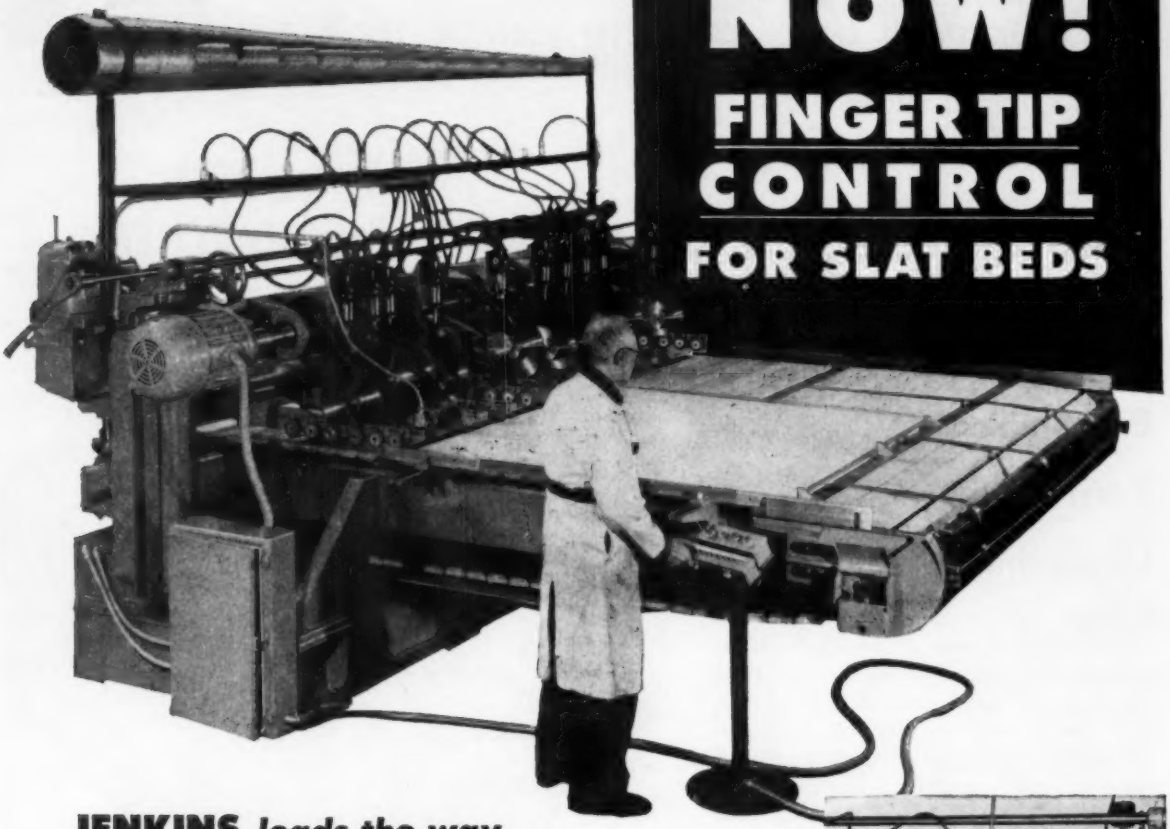
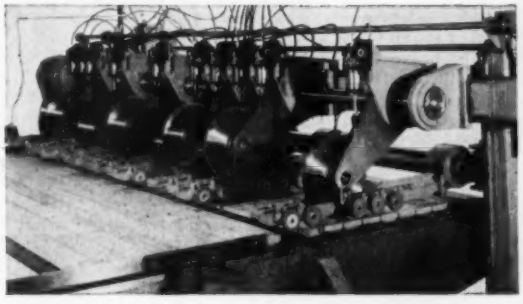
NOW!
FINGER TIP CONTROL FOR SLAT BEDS

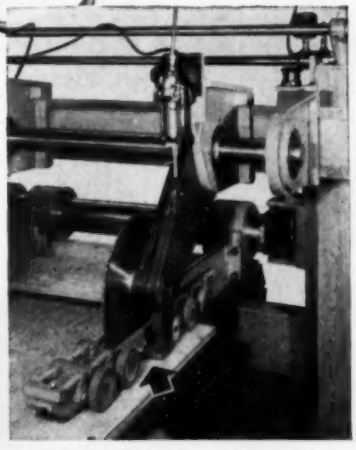


JENKINS *leads the way in modern production*

Precision — accuracy — superior performance — flexibility — yours with modern Jenkins woodworking equipment like the new slat bed pictured above. All these quality features have made Jenkins the pace-setter of the industry . . . and now the unique, new portable control panel that permits *finger tip control* of all power stations from any vantage point around the machine. Here's further proof that the best of fine woodworking machinery bears the Jenkins name.



Ten saw-equipped Uni-Lifts on this slat bed allow operator to cut panels to any width needed. Multiple cutter set-up is also used for texturing. Quick response of Uni-Lifts plus finger-tip control permits panel width or surface texture pattern change at a flick of the finger while machine runs at production speeds.



Special roller bearing (arrow) adjusts to thickness of stock, assures consistent depth of cut regardless of surface irregularities. Rubber-wheeled holddowns remain in effective position when saw is lifted or removed for sharpening.

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A-480M Series DIAGONAL PLANER and MATCHER

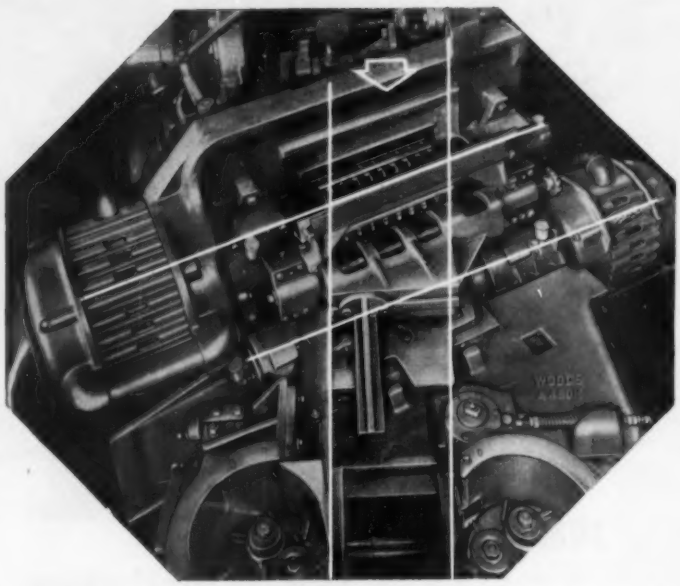
prevents

End-Sniping

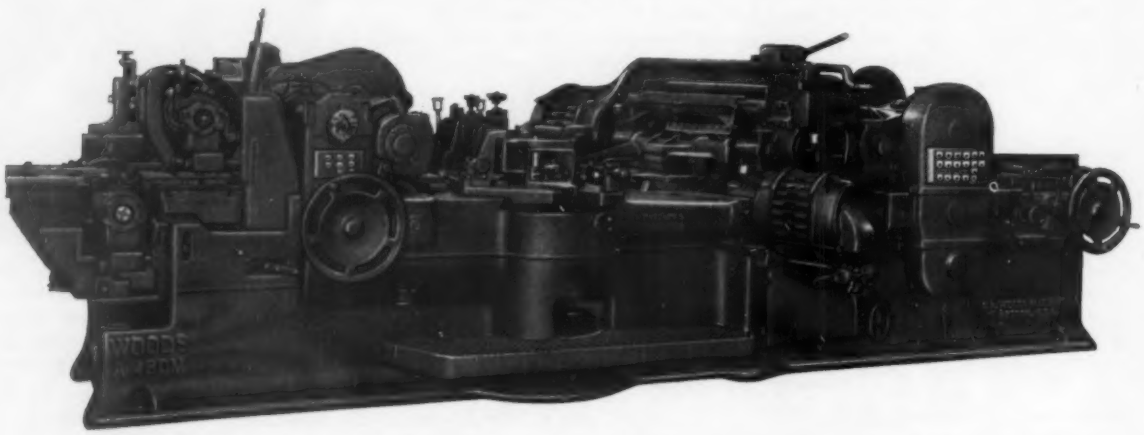
Torn Grain

Loosening of Knots

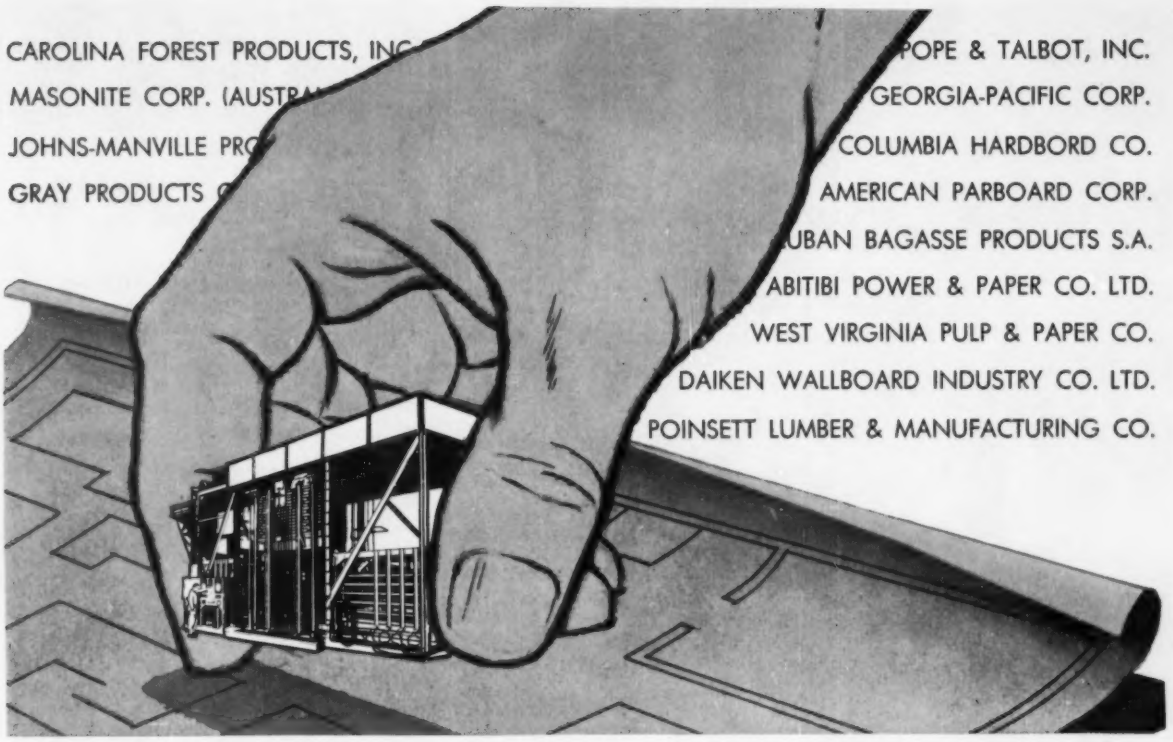
The Top and Bottom Cutterhead Units are mounted diagonally to the main Guide of the machine, presenting a sheer cut to the stock under Top Cylinder and over Bottom Cylinder which eliminates sniped ends. It also gives a smoother finish around knots and cross grain. Less power is needed to feed the stock. Less lead is required in guide as angle cutterheads hold stock against guide fence.



Investigate now how this improved patented method of sizing lumber can improve your margin of profit on every hour's run. Write today for the A-480 M Series booklets.



S. A. WOODS MACHINE CO.
27 DAMRELL STREET
BOSTON 27, MASS.



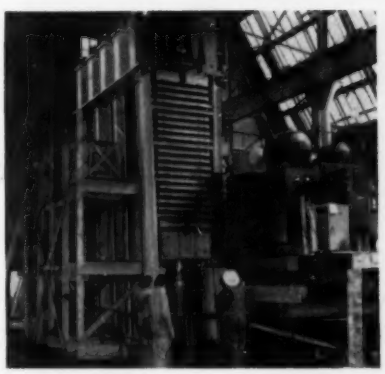
Follow the example of the world's leading board producers,

SPECIFY WASHINGTON CUSTOM-BUILT PRESS EQUIPMENT

These leading producers of particle board, flakeboard and hardboard have one thing in common. In each plant the key to consistent high quality and reliable production is a Washington-built press, in most cases supplemented by Washington automatic loading and unloading equipment. For dry process hardboard production, Washington engineers and supplies complete forming line equipment.

Variations in raw material, pre-forming method, production rate and board size and density range necessitate specially engineered equipment. Washington Iron Works offers the board industry a complete service in the design, engineering and manufacturing of custom-built presses and accessories for automatic operation.

Washington custom-built press equipment has a place in your plans for reliable, efficient and economical board production. For complete information write to Washington Iron Works, 1500 Sixth South, Seattle 4, Washington.



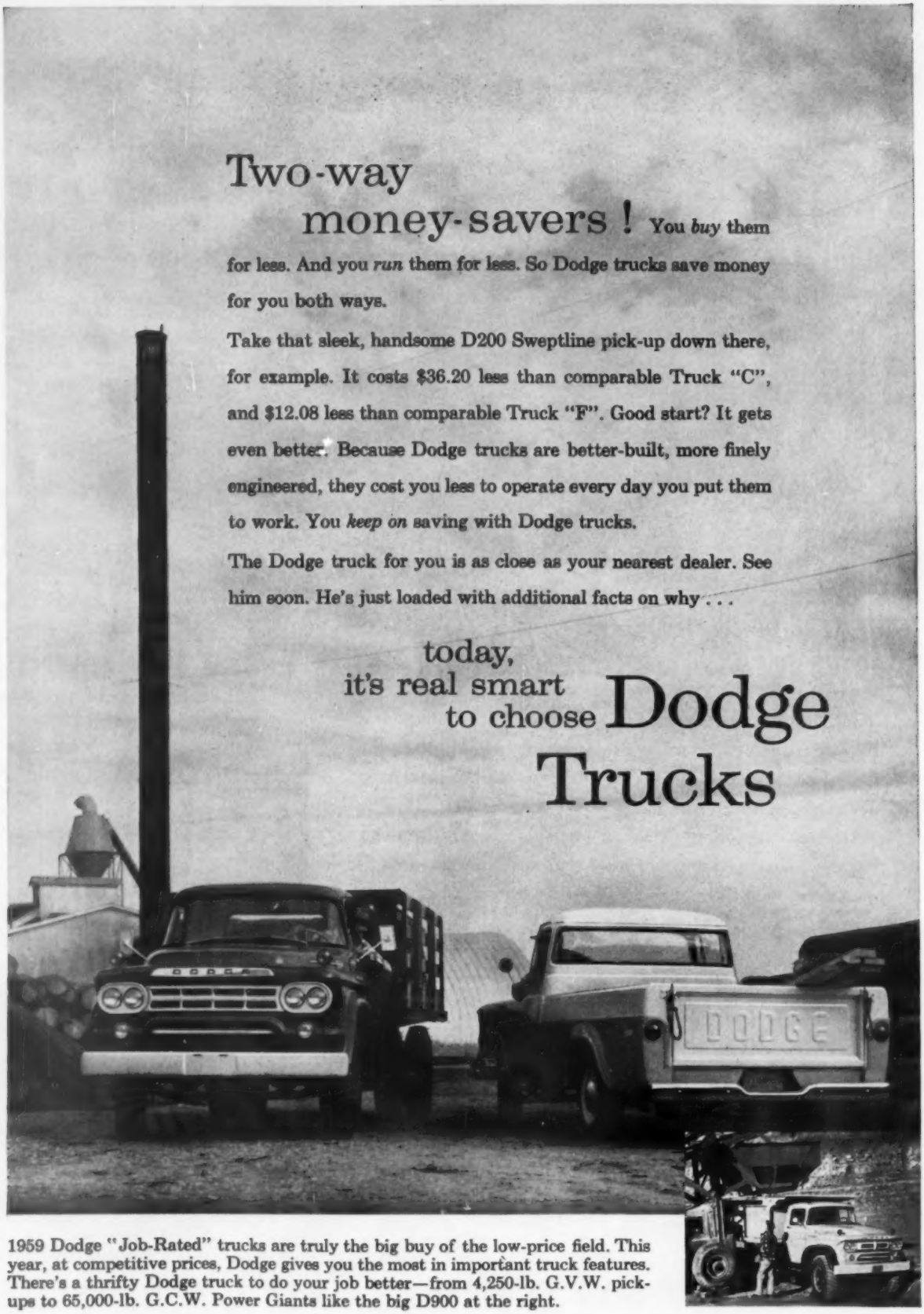
All Washington equipment is designed and built in close cooperation with plant engineers. Predelivery assembly and testing avoids costly installation delays and proves all equipment under near-operating conditions before leaving the plant.

HOT PLATE PRESSES • PULP BALING PRESSES
SPECIAL HYDRAULIC PRESSES • AUTOMATIC PRESS LOADERS AND UNLOADERS
COMPLETE DRY PROCESS HARDBOARD FORMING LINE EQUIPMENT

WASHINGTON IRON WORKS

WASHINGTON PRESSES

and ACCESSORY EQUIPMENT


Two-way
money-savers ! You *buy* them for less. And you *run* them for less. So Dodge trucks save money for you both ways.
Take that sleek, handsome D200 Sweptline pick-up down there, for example. It costs $36.20 less than comparable Truck "C", and $12.08 less than comparable Truck "F". Good start? It gets even better. Because Dodge trucks are better-built, more finely engineered, they cost you less to operate every day you put them to work. You *keep on* saving with Dodge trucks.
The Dodge truck for you is as close as your nearest dealer. See him soon. He's just loaded with additional facts on why . . .
today,
it's real smart
to choose Dodge
Trucks
DODGE
DODGE

1959 Dodge "Job-Rated" trucks are truly the big buy of the low-price field. This year, at competitive prices, Dodge gives you the most in important truck features. There's a thrifty Dodge truck to do your job better—from 4,250-lb. G.V.W. pick-ups to 65,000-lb. G.C.W. Power Giants like the big D900 at the right.

TRIAL SAMPLES

of World-Famous WHITMORE'S LUBRICANTS Now in Spray-On-Cans and Cartridges!

WHITMORE'S WIRE ROPE SPRAY INCREASES WIRE ROPE LIFE UP TO 300%

Exclusive formulas for lubricating and protecting wire rope, chain, springs. Penetrates to the core of wire rope minimizing internal friction and increasing usable life up to 300%—special protective qualities absolutely eliminate internal and external corrosion—non-gumming qualities reduce "carry-back"—packaged in handy 16 oz. aerosol spray-on containers or in bulk containers—send for a free trial sample.

WHITMORE'S LIQUID GEAR COMPOSITIONS ELIMINATE METAL TO METAL CONTACT

For open gears, dipper sticks, cams and sliding surfaces—exclusive formulas eliminate metal-to-metal contact, keep wear on the lubricant not the metal—no breakdown even after prolonged use under water—available for every climatic condition—packaged in handy 16-oz. aerosol spray-on containers or in bulk containers—send for a free trial sample.

WHITMORE'S ANTI-FRICTION COMPOSITIONS HAVE NO MELTING OR DROPPING POINT

Packaged in 14½ oz. cartridges for handy application with lever-type cartridge guns for constant protection to roller, ball, sleeve bearings and sliding surfaces in "hot" bearing applications or in areas with high ambient heat. Exclusive formulas have no melting or dropping point; moisture resistant; will not wash out; exceptional metal adherence properties; temperature reducing qualities; extreme pressure values. Available in two grades. Whitmore's Anti-Friction Composition No. 1 (light density), recommended for high speed, high temperature applications. Anti-Friction Composition No. 2 (heavier density), for low speed high temperature applications or loosely-fitted bearings. Specify No. when requesting free trial sample.

65 YEARS OF LEADERSHIP
LUBRICATING THE FOLLOWING:

- Open Gears, Dipper Sticks, Cams • Enclosed Gear Cases
- Wire Rope and Cable • Hydraulic Units, Torque Converters
- Roller, Ball, and Sleeve Bearings • Speed Reducers

The Whitmore Mfg. Co.
LUBRICATING ENGINEERS
CLEVELAND 4, OHIO, U.S.A.
PHONE VUlcan 3-7272

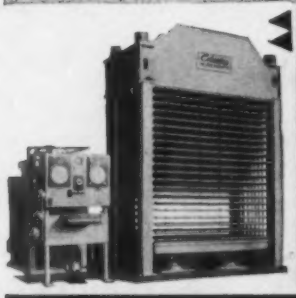
The Whitmore Mfg. Co., Cleveland 4, Ohio
Please send me free TRIAL SAMPLES of the following:

- ☐ WIRE ROPE SPRAY
- ☐ LIQUID GEAR COMPOSITION
- ☐ ANTI-FRICTION COMPOSITION NO. 1
- ☐ ANTI-FRICTION COMPOSITION NO. 2

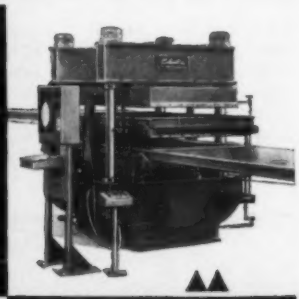
NAME_____ TITLE_____
COMPANY_____
ADDRESS_____

. . . for time and money saving production of

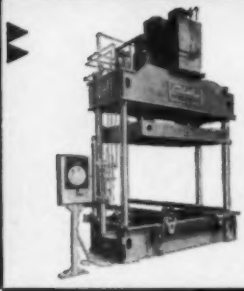
pick a
TIME-PROVED
INDUSTRY-APPROVED
Columbia
HYDRAULIC PRESS



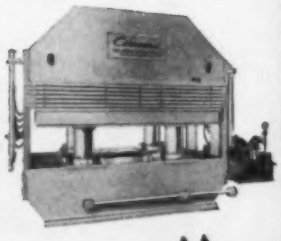
HOT PLATE PRESSES . . . 15 outstanding features for top production and quality, saving time and money. Rigid design, trouble free hydraulic system and honest rating guarantee dependable performance.
Request Bulletin HP-300.



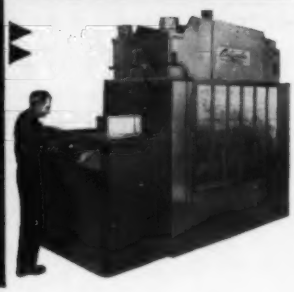
COLD LAMINATING PRESSES . . . proved for low-cost operation. Available in a complete range of sizes and types; upstroke and downstroke models; pressures to 200 psi. Convertible to high frequency operation.
Request Bulletin HP-200.



SHUTTLE PRESSES . . . designed and pioneered by Columbia to utilize labor to the fullest extent. Handlers discharge and reload one caul while load on other is under compression in the press.
Request Bulletin HP-400.



HIGH FREQUENCY PRESSES . . . double duty: cold laminating or with high frequency heating for fast production of large or small lots with low-cost, shop-made forms for better curved laminated panels.
Request Bulletin HP-300.



FLOOR TYPE PRESSES . . . offering one to five daylights and economy of installation and operation. Feature most advanced hydraulic and mechanical equipment. Available in end and side-loading models.
Request Bulletin HP-400.

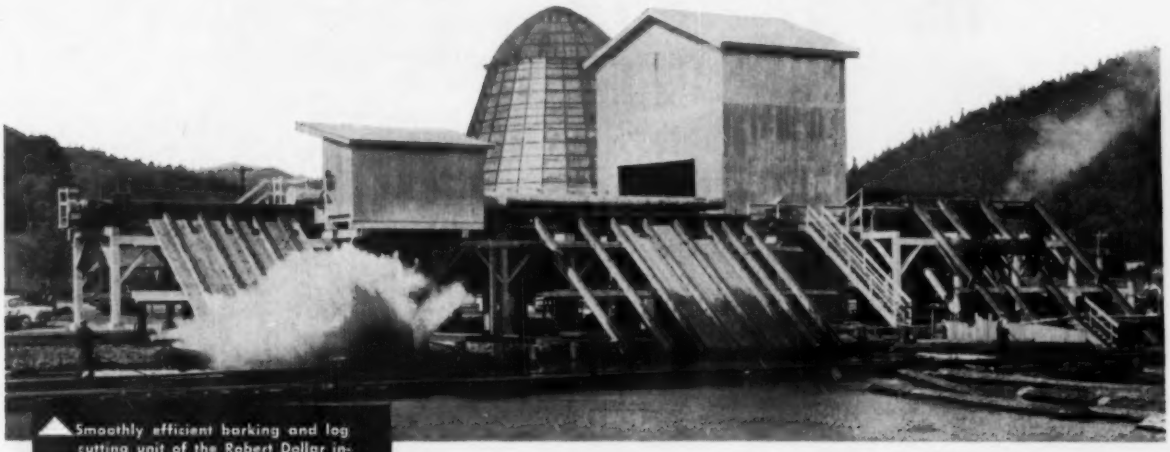
Columbia Hot Plate, Cold Laminating and High Frequency Presses incorporate modern, proven features which assure production output, quality and efficiency with trouble-free performance. Their industry-wide acceptance is the result of many years of experience in design and manufacture of presses.

For detailed COLUMBIA literature, write:
The LODGE & SHIPLEY Company
3060 Colerain Ave., Cincinnati 25, Ohio

T. H. Mehl, Jr.

Manager, Robert Dollar Co., Glendale Division, Glendale, Oregon

says: "Our new L-M Automation Unit and 60" barker combination was built to handle 350,000 feet of logs per day. Actually, we are doing better than that."

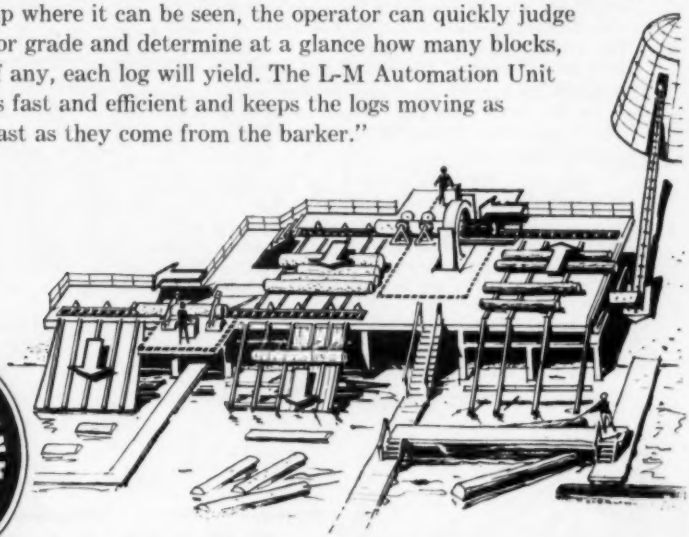


Smoothly efficient barking and log cutting unit of the Robert Dollar installation at Glendale. A pair of peeler blocks has just rolled down the chute into the pond. L-M Automation Unit is contained in housing above splash.

The L-M Automation Unit cutting two peeler blocks at once.

Cutting lily-pad trim from butt end of a log. L-M Automation Controls at right.

"Our two-saw L-M Deck Automation Unit lets us get everything from the log . . . full value in both peeler blocks and sawlogs. If the log has one or two peeler blocks in it, the L-M saws cut them off and they are sent on, via the pond, to the veneer plant. By operation of the automation controls, the remainder of the log is backed up and pushed down a chute into the pond to be floated to the sawmill. Our L-M Automation Unit makes up to two cuts at once, and the operator has full control of the operation from the log deck following the barker to chuting logs and blocks into the pond. With the log up where it can be seen, the operator can quickly judge for grade and determine at a glance how many blocks, if any, each log will yield. The L-M Automation Unit is fast and efficient and keeps the logs moving as fast as they come from the barker."



An International Sales and Service Organization

L-M EQUIPMENT COMPANY — THE HOUSE OF CHAIN SAWS

8705 S. E. 13th Ave. • P. O. Box 4681 • Portland 2, Oregon • Phone: BE 5-3146

In Canada:

L-M Equipment Co. (BC) Ltd. • 4740 Lougheed Highway • Burnaby 1, B. C. • CYpress 8-6242

...exclusive CARY-LIFT feature eliminates costly, old-fashioned loading and unloading by hand

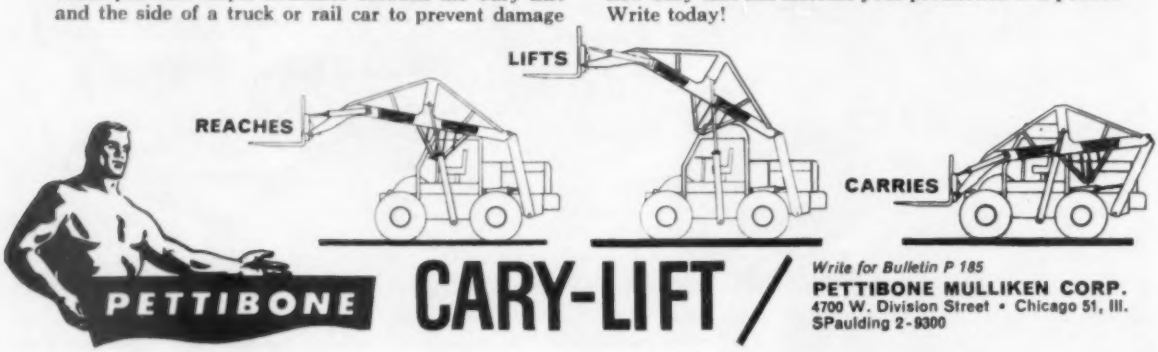
Cary-Lift not only performs the usual loader functions of carrying and lifting loads, but adds the *exclusive* BIG REACH — the patented 4 ft. hydraulic *forward reach* at *all* heights! It picks the load off the ground, carries it, then positions it high up and over on piles — no hands! And Cary-Lift comes in models that will handle capacities from 6000 to 60,000 lbs., depending on your requirements.

In the kilns, the high forward reach permits stacking to capacity in fast time . . . with *no hand labor*. Rail cars and trucks can be loaded from one side—a great time-saving feature. Also, the long forward reach provides ample clearance between the Cary-Lift and the side of a truck or rail car to prevent damage to equipment, while adding safety for the operator.

Powerful 4 wheel drive and high flotation tires guarantee continuous operation the year around, regardless of terrain or weather.

Cary-Lift does so many jobs around the yard that it is recognized as the most versatile all-purpose loader in the lumbering industry today. Owners find that *one* Cary-Lift *easily replaces* as many as *three* special-purpose machines—a big saving in equipment investment!

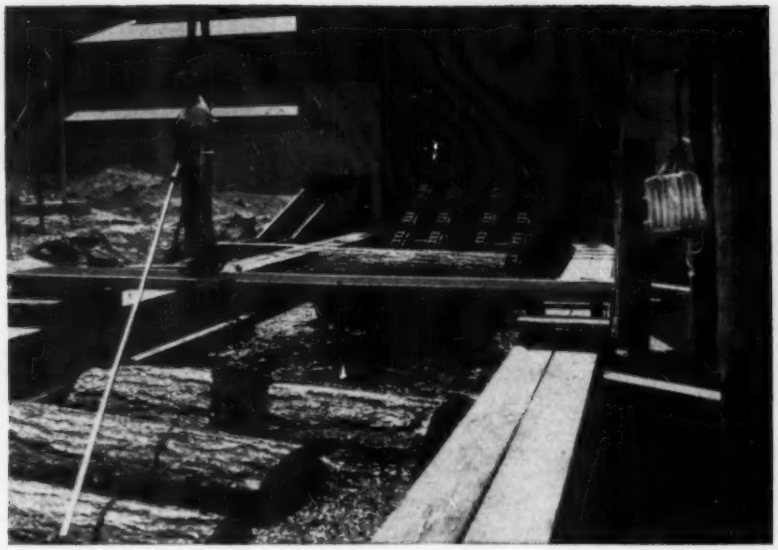
It will pay you to ask experienced Pettibone engineers to make a survey of your operation. They will show you how Cary-Lift can increase your production and profits. Write today!



CARY-LIFT

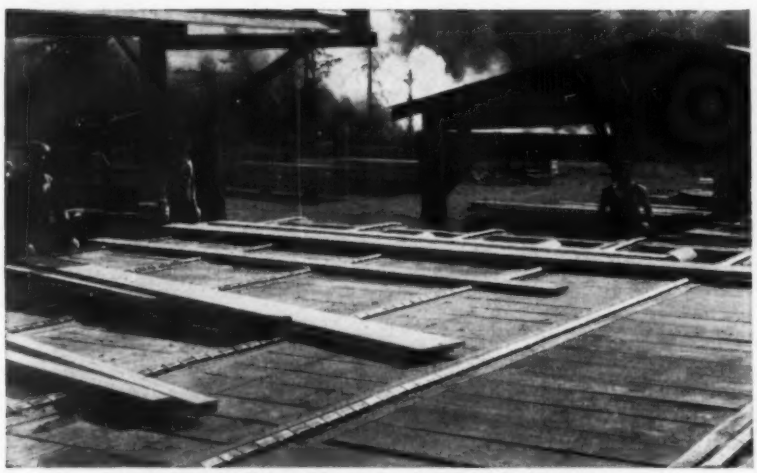
Write for Bulletin P 185

PETTIBONE MULLIKEN CORP.
4700 W. Division Street • Chicago 51, Ill.
SPaulding 2-9300



PW-132 combination Chain handles heavy logs in saw mill.

Choose dependable **Jeffrey chain** for efficient handling



Transfer chain sliding along on wooden runways serve as sorting conveyor in lumber mill. Roller top chain also available.

Jeffrey chain is a precision product, available in several types tailor-made for lumber handling systems. By choosing the right chain for the individual job, you will operate at top efficiency. And Jeffrey chain is built for durability, can be counted on for long dependable operation.

From selection of materials, through machining, assembling, and inspection, Jeffrey chain is produced to the highest standards. For fast service in chain, call your nearest Jeffrey distributor, or write The Jeffrey Manufacturing Company, 850 North Fourth St., Columbus 16, Ohio.

JEFFREY

CONVEYING • PROCESSING • MINING EQUIPMENT...TRANSMISSION MACHINERY...CONTRACT MANUFACTURING

DOLLAR SHAVINGS

THE SHARPER THE EDGE THE KEENER YOUR PROFITS

From raw steel to final sharpening, we build in greater shock resistance and longer-lasting, sharper cutting edges . . . to give you more production at less cost.

Talk to us today about your requirements.

SPEAR & JACKSON

"The Saw Without a Flaw"

EUGENE, ORE.

50-103A

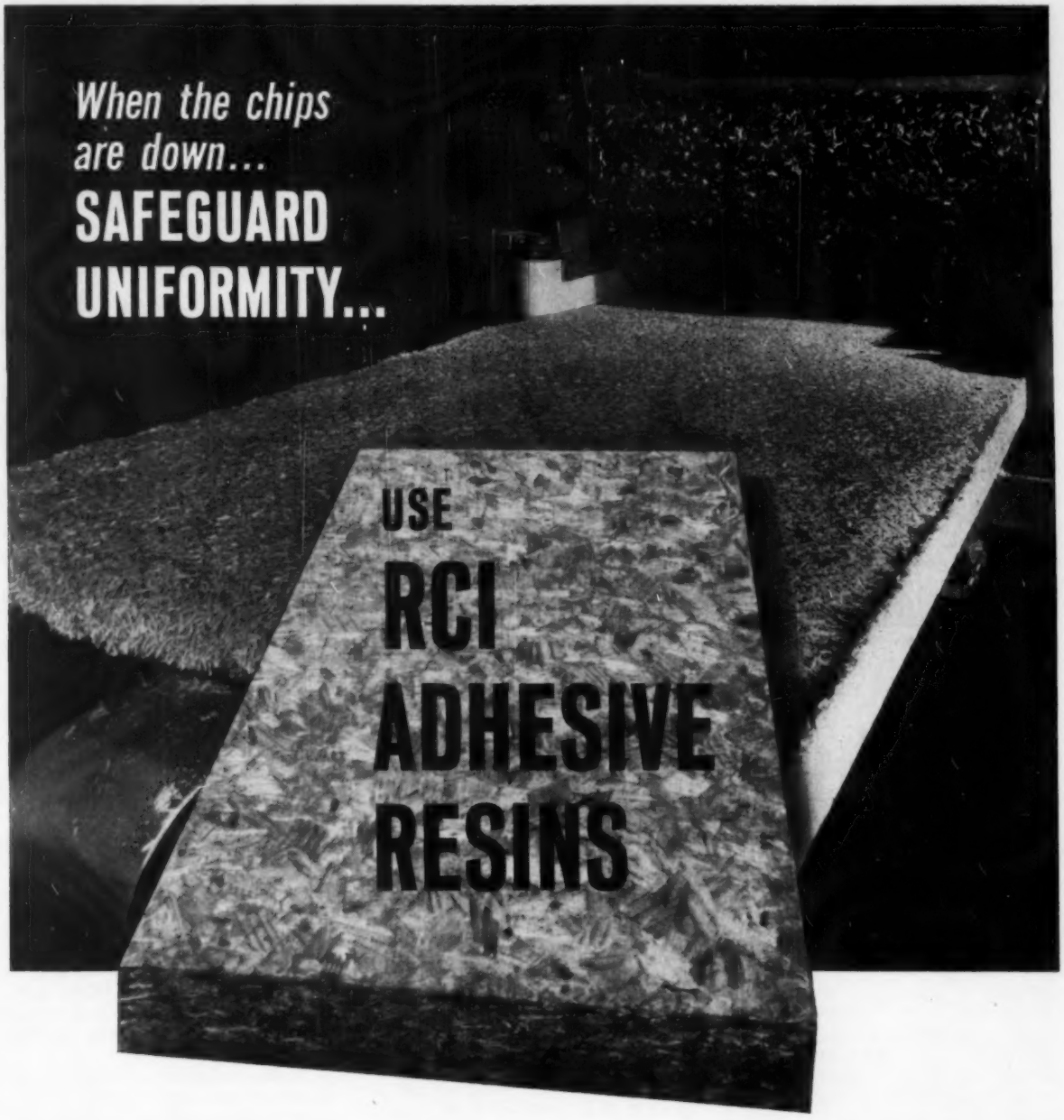
SAWMILL FOR LEASE OR RENT

AT

METLAKATLA, ALASKA ON ANNETTE ISLAND

Can cut from 75 to 85 thousand board feet per 8 hour shift. Has a 9 foot Allis Chalmers Band Saw, I. W. Johnson Edger and Prescott trimmer. All machinery and transfer chains electrically operated. Abundance of logs available from logging camps and from the Ketchikan Pulp Mill. Facilities for loading barges for shipment south to Seattle available at Mill dock. Chipper can be installed in Mill to provide chips for the Ketchikan Pulp Mill. The Sawmill is 650 miles from Seattle.

For further information regarding Sawmill Contact Mayor Henry S. Littlefield or John W. Smith at Metlakatla, Alaska.



The even distribution of flakes and adhesive is all-important in the manufacture of high grade particle board. This means that the resin you use must be of dependable high quality in order to bind the flakes into a firmly uniform finished product.

RCI's particle board adhesives meet these rigid specifications with plenty to spare. That's why the American Parboard Corporation, Black Mountain, N. C. (where the photograph above was taken), uses Reichhold adhesive resins *exclusively* in its particle board production.

And don't forget, when you do business with RCI, you can count on expert technical assistance, plus fast dependable delivery all over the country.

If *you* are interested in particle board manufacture, write Reichhold for a copy of Booklet PB . . . which covers this subject in detail.

REICHHOLD

Urea-Formaldehyde, Phenol-Formaldehyde, Polyvinyl Acetate and Resorcinol Adhesives, Protein Glues.

REICHHOLD CHEMICALS, INC.,
RCI BUILDING, WHITE PLAINS, N.Y.

Creative Chemistry . . . Your Partner in Progress

RCI

WALL SPACE IS DISPLAY SPACE. A small wall area provides ample space for a salesman to show off new and different hardboards. A perforated hardboard serves as background against which to plug the other surfaces.

G-P Sells Hardboard to the Public and Trade with

of the product and its uses, eye-catching displays and packages

Of all the major wood products in recent years probably none has been promoted less than hardboard. Until the industry started punching the stuff full of holes John Q. Public scarcely cared to recognize that it even existed. Hence this particular product has struggled along like a poor relative in a fancy town and only now appears to be coming slowly into its own.

For example, one manufacturer, Georgia-Pacific Corp., which makes hardboard as part of its integrated manufacturing plan, started with underlayment, ordinary hardboard and tempered hardboard. Realizing that something had to be added in order to compete with the more glamorous wall coverings both from salesmen's and consumer's points of view the company began to add textured and shaped panels and factory finished panels.

This was calculated to catch customer interest and to overcome the old resistance to the yellow-brown color of hardboard. One major obstacle was the informing of the general public, the other was the trade, which was not informed on how and where to use the panels.

BASIC INFORMATION was produced on a modest budget. The first was a four-page "spec" sheet in two colors, outlining the facts about 20 multi-purpose hardboard products offered by G-P. This was itself a multi-purpose piece useful for any kind of consumer, as a counter piece or direct mail piece. To this was added another two-color, four-page folder directed straight at the industrial wood worker. It showed the machinability of hardboard and its specifications.

Next came a Sweet's Catalog insert, a vital addition to reach architects, contractors and other potential customers. Only one special piece was prepared, this for the garage door market which is a substantial one of the hardboard field.

PROPER USE of hardboard was the next story to be told to both customers and sales people. Every package of the product contains a one-page, two-side instructional sheet which covers everything from conditioning to die cutting and painting. Once again this is a dual purpose piece which can be used as direct mail or counter material.

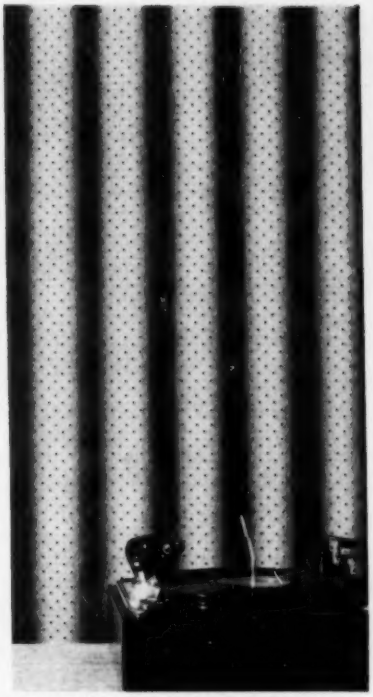
To this was added a counter or wall unit composed of a 10¾-inch or 8½-inch section of ribbed hardboard and a 32-page reprint from *Popular Mechanics Magazine* titled "Hardboard Projects." The hardboard has one-half its surface painted to show how well it surfaces.

In distributors' warehouses and on dealers shelves there is no ignoring G-P's hardboard products. They are packaged in Royal Blue kraft paper with brilliant red and yellow labels.

HARDBOARD GETS A PUSH in Georgia-Pacific's colorful product display. It has equal billing with the glamorous hardwood plywoods, redwood and other offerings, so that customers can see how it stacks up against other available panelings. The com-

CORRUGATED HARDBOARD helps control sound, can be finished to look like fabric.

TEXTURES ARE COMBINED. Upper section is channeled square panes, lower is ribbed panels.



CORRUGATED AND PERFORATED panels are distinctive, have many applications.

carefully told story

and trade journal ads.

parison does it no harm. For dealers who want a small separate display, the hardboard department uses a dealer "flop-down" showing nine different hardboards out of G-P's 20, with proper description of each. The header of the "flop-down" not only carries the company name and sales message but is also an example of how hardboard machines with several designs tooled into its surfaces.

WHAT ABOUT ADVERTISING? So far this particular company limits its to the trade publications. However the fact stands clearly that hardboard is above and beyond its old self now and by virture of its gaining beauty and utility may justify itself for consumer advertising.

Despite the modesty of the program practiced by G-P for this one product, it appears to be making excellent ground. With this base to build on, increased sales effort, increasing integration of wood products manufacturing and a burgeoning market it appears this program has a real future.

VARIETY OF LITERATURE has been prepared to attract the attention of the general public or to provide more technical information for architects and builders.

Simpson Promotes Acoustical Products with many-pronged program that is both serious and humorous but always of quality

Simpson Logging Co., Shelton, Wash., promotes its board products with everything from a dealer's slide film to TV and four-color ads in popular consumer magazines.

Where a light touch is apropos to make a point, its use is not stinted—as witness the "ruffled grouch" and the "domestic bowerbird," typical cartoon caricatures which put across the idea that home noise is annoying and can be controlled. If a serious approach is in order, there's no dearth of technical manuals and catalogs.

The company's concept of merchandising and promotion is based on adaptability, with general and persistent overtones of quality. For example, outstanding designers such as Paul Laszlo, William Pahlmann and George Nelson lend their names to the concept of sound-conditioning. A gold frame panel holds samples of Forestone acoustical ceiling tile.

Always, the emphasis is on quality through the use of familiar symbols—names, gold, big circulation magazines.

As new products are placed on the market the emphasis is shifted to give them prominence, with no break in the even tenor of the promotion program. Simpson's new random-drilled, calendered, acoustical tile is now getting the heavy treatment. Dealers stocking this tile get a variety of in-store sales aids as well as a decorative, gold frame, panel display.

ACOUSTICAL CEILING TILE DISPLAYS are powerful point-of-purchase sales help. Those shown here in yard of Arden Lumber Co., Sacramento, Calif., doubled tile sales in a year.

The four fronts on which the company promotes insulating board products are:

- National consumer and trade publications.
- Sales and display pieces.
- Color-slide films.
- Catalogs and technical manuals.

Simpson realizes that only aggressive, continued promotion will improve existing sales pictures. It's no longer enough to be able to build better mouse traps to have the world beat a path to the door. The successful producer tells people . . . and tells them . . . and tells them . . . and . . .

Insulite Merchandises Its Products from Plant

PACKAGING IS IMPORTANT to Insulite. Individual packages with the Insulite label are further strapped in unit containing 32 of the smaller packages. Handling time is reduced.

Typical of the thought which Insulite expends on a national promotion program, is the attention given to packaging and to dealer aids. The former helps dealers realize substantial savings in unloading time, while the dealer aids are a help in translating consumer interest to customer action.

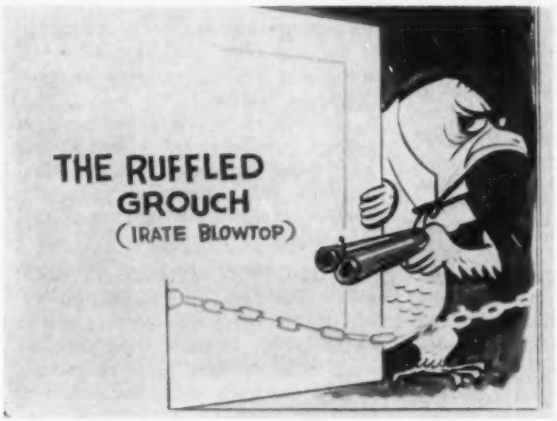
The company is promoting its ceiling tiles with four-color full page ads in *Better Homes & Gardens* magazine, and backing them up with window and wall posters and a merchandising display for dealers.

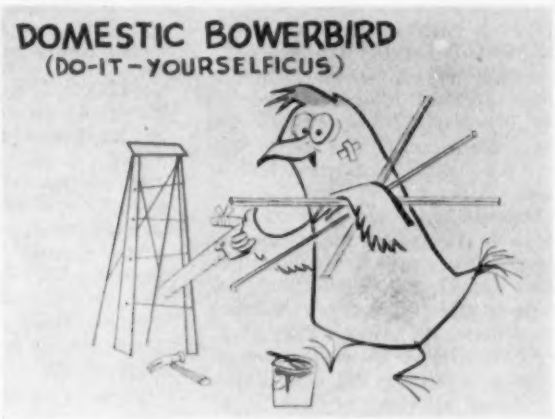
The 30x40 inch full-color window and wall poster reproduces Insulite's April magazine ad along with an enlargement of the ad's feature, ceiling tile.

MAILING KITS of random, drill calendered acoustical tile are an important part of the merchandising program.

FORESTONE PROMOTION KIT goes to dealers stocking the line. Attractive display attracts customer to literature.

ON THE LIGHTER SIDE is a color-slide film promoting acoustical tile in which the "leads" are played by Ruffled Grouch and Domestic Bowerbird. Titled "Birdbagger's Guide," the film illustrates that noise is a major problem in today's house.



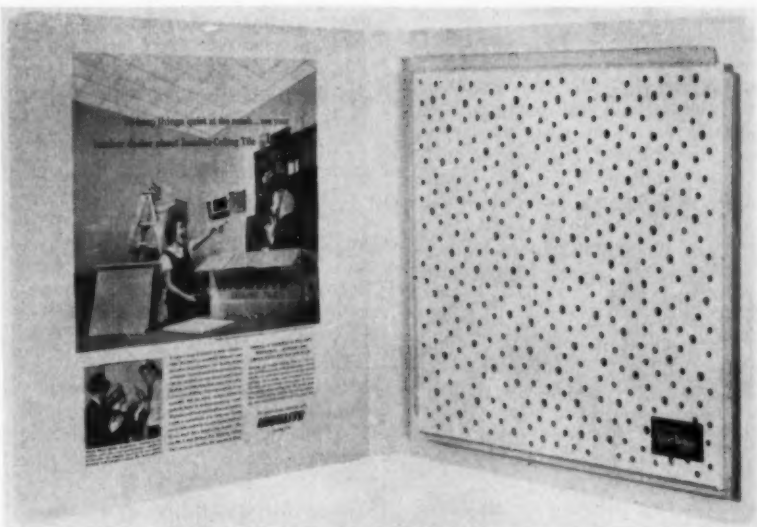


to Point of Sale

The packaging method involves the use of an Acme Steel F1 strapping machine to package Insulite prime siding at the firm's International Falls, Minnesota, plant. The panels are 4x8 feet (for the vertically applied panels) and 1x16 feet in size (for the horizontal panels).

The vertical panels require three straps around the package. Horizontal panels are laid on corrugated board prior to strapping, and then packaged with eight straps. When 32 packages have been stacked, they are strapped again into a self-palletized unit for mechanical handling equipment.

The packages do not shift during shipment and the customer can unload 3000 feet of panels at one time in the palletized units.



DEALERS' DISPLAY PIECE shows reproduction of Insulite ad in *Better Homes & Gardens* dressed up with an actual sample of ceiling tile on the facing page.

SALES PLANNING is important in coordinating work. Plywood Service, Inc. staffmen Bob Holvey and John Earwood confer with Bill Gray, center, on particle board promotion.

PROMOTION LITERATURE on particle board products is mailed out from firm's Dillard, Ore., office. Floor of the new, modern office is finished in the firm's Par-Tile.

Particle Board Floor Tile Promoted with extensive

pre-selling program combining TV, field promotion and dealer aids

Particle board is one of the newest and "hottest" items in the wood products field this year. Its merchandising calls for planned promotion. Progressive Plywood Service, Inc., Dillard, Ore., international sales representatives for Pacqua, Inc., knows how to do it.

Merchandising particle board floor tile is an example. This fast-blossoming product was first produced two years ago. It is a high-density tile made of pressed wood particles (See THE LUMBERMAN, July, 1959).

As Bill Gray, Plywood Service assistant sales manager in charge of particle board sales says, "We take the raw material, remove nature's mistakes and put it back together again."

TESTS WERE NECESSARY before the product could be marketed. In addition to Pacquas' own exhaustive structural and wear tests, trial installations were necessary. Several school jobs were individually sold to obtain good trials in high-wear locations.

Next a market test was necessary to check approaches. The nearby bustling city of Eugene was chosen for the test market. Scharf's Twinoaks Builder's Supply was made the retail outlet and Herb Wood was chosen to merchandise Eugene area floor applicators.

A combination of saturation television and radio was used to reach the public as well as mailings to all builders and architects. The original placement was 20,000 square feet with sales tallies showing a total sale of 1,100 cartons, or 50,000 square feet in six months—a creditable showing for an entirely new product.

Par-Tile (the company's trade name for the tile) was ready to hit the big market, and the biggest of them all—sprawling Los Angeles, Calif., was chosen for the initial effort.

BEFORE THE PROMOTION campaign could get underway, distributors and retailers had to be signed. Both the public and the dealers had to be educated on just what the product was and what it would do. Plywood Service representatives actually pre-sell retailers — obtain orders for stated amounts of Par-Tile from retailers and then obtain distributors to back the retailers. This is not difficult when the distributors are presented with a ready-made market.

Plywood Service gives its dealers a good many sales aids, therefore it tries to sell the key progressive dealers who will get behind the product and push it.

Once the dealers and distributors were obtained, the campaign was ready to roll.

Par-Tile was something entirely new and bold strokes were called for to introduce it to the market.

Los Angeles television station KTTV which ran the bulk of the product's commercials, staged a dealer and distributor party to give them a complete preview of the month-long program ahead, including sponsorship of some 50 major TV programs and dozens of one-minute radio spots on 10 Los Angeles radio stations.

The television commercials have 45 seconds of general Par-Tile promotion with the balance of the one-minute spot filled out by identifying dealers. The dealer's name is brought before the public at no charge to him.

Following completion of the four-week's blitz, short 10- and 20-second cartoon spots were used on TV to keep the product in front of the public.

Portland, Ore., and Honolulu, Hawaii, have since been given identical full-scale treatment.

In addition to the consumer promotion, building industry trade journal advertising helps to back Plywood Service's field promotion men who contact architects and builders as well as retailers.

PROMOTION MEN ASSIST builders in Par-Tile installations, answering any questions and insuring proper installations. Through their contacts with architects they begin to get the commercial work and as the architects learn the product's good points, they begin to specify it for custom homes.

In their dealer contacts, the field men keep salesmen's interets in Par-Tile alive.

As Par-Tile is a comparatively new product, the trade journal advertising has resulted in a flood of inquiries. All inquiries get personal attention of sales manager John Longfellow or his assistant, Bill Gray.

A follow-up form is attached to the inquiry to guarantee follow-up. This includes: date received, answered, how answered, samples sent, and records of subsequent correspondence.

After the first reply, inquiries are placed in the suspense file for two weeks. If there is no further correspondence from the inquirer during the period, follow-up is made by another letter or personal contact by a field man.

The Par-Tile program is broken down to a marketing formula. Based on the market, volume can be predicted. An estimate of repeat orders is made and the number of dealers and distributors is projected.

PACKAGING OF PAR-TILE is integral part of merchandising. Attractive eye-catching package is important at point-of-sale.

Job-Tailored Particle Board

CFI Boards, Inc., Castor Valley, Calif., handles particle board from several mills. It assigns a CFI code number and merchandises each number for a specific use.

NEW MARKETS ARE PROMOTED only as production can keep pace. Pacqua started particle board production of 500,000 square feet monthly in 1957. Monthly production is now 3½ million square feet and it is still growing. Sales are more than keeping pace with this increased production.

Merchandising always has been an important part of these firms' programs and new products are important. About 20% of Pacqua's current production is in specialty items with markets for specialties continually increasing.

Mr. Gray says the future of the Pacqua operation and the future of other particle board producers is in diversification to find better, and exclusive, uses for the product instead of competing with existing cost building materials.

In working on new products, his thought is, "Is this going to be a better product for the end-user?"

PACQUA'S FIRST SPECIALTY was in birch overlayment on particle board core. Then came Par-Tile, followed by embossing two sides to provide two separate embossed patterns on the same board. Par-Tex, an exterior board for soffits, siding, fencing and roof sheathing, was next followed by a grooved decorative exterior siding. A recent development of Pacqua is that of offering fungus and insect repellancy in all its various products.

Mr. Gray traces the short history of the particle board business from his first sales trip in May, 1955. Out of 35 or 40 calls he made, he found only four or five customers who would even listen to his particle board story. In January, 1956, he found about half his contacts were slightly interested, though still aloof.

Finally, in early 1957, he found he could hardly get away after telling about his product. The customers were really interested.

And he likes to keep them that way.

CFI's basic aim is to simplify the task of the specifier or user in determining the best particle board for the job he is doing, according to company president Walter Hail.

"There are dozens of types and sizes of particle board and few users can familiarize themselves with all the properties and specifications of this array of boards, to decide which best fits their needs. We do this for them with our CFI coding."

The company sells only particle board and particle board derivatives. It handles nothing else. It merchandises throughout the West and it handles the board from mills in Oregon, Idaho and California.

OPERATING PROCEDURE is to group the properties and the specifications of the various boads it handles and then to assign a three-element numerical code. It thus "sells what the board will do for the user" rather than sell "mill name." Just what the board will do is rolled up into the three-part code, i.e., CFI 441.

The code stands for first, all of the properties and specifications of the board; second, the kind of binder used, and third, the name of the producing mill.

For example, CFI 441 is described in a company mailing piece as ideal for table top cores. In total, the 441 code stands for a polish-sanded, supersmooth, single aggregate board, with 100% clear face both sides, with moisture content 6-8%, water absorption (24-hour soak) 9%, thickness tolerance of .005, plus or minus, dimensional stability of .0007, modulus of rupture of 2100 psi and screw holding strength of 350 pounds. The board is produced by an Oregon mill.

Similarly, CFI 841 is ideal for flooring block use.

"Our coding system," says Mr. Hail, "is a step toward the standardization which is not yet extant in the particle board industry. And we feel standardization is important, both for the user and for the industry."

CFI CODE is the company's own creation and is its major merchandising tool. And though assigned by CFI, the code is determined as a result of work by its own research facilities as well as work with the technical departments of the producing mills.

Mr. Hail constantly visits the supplying mills to keep abreast of the flow of orders as well as to discuss new developments and ideas, particularly with respect to particle board derivatives.

Among the products merchandised by CFI are particle board flooring, panel board, hardwood overlay panels, decorative wall panels, high density particle board and decorative imprint panels.

All orders are processed through the Castro Valley office, where Mr. Hail has a sales manager and two secretaries. The other offices are located at Portland, Ore., Seattle and Tacoma, Wash., Los Angeles and Denver, Colo. The Los Angeles office has three field representatives operating out of it and the other offices have one or two representatives.

FIELD REPRESENTATIVES responsibilities are two-fold: to call on and sell to distributors (wholesalers), and to work in the territory on behalf of the distributors' salesmen who are selling to lumber yards, cabinet shops, etc.

Nearly all CFI orders are carload lots, but the company does have one truck and trailer rig, on contract, operating out of Lebanon, Oregon.

CFI carries on a full direct mail and advertising program for its various boards. Its field application reports are concise, descriptive folders which use top-notch photography and layout. Further promotion of CFI boards and services is done in trade paper ads.

Mr. Hail believes there is a tremendous market potential in particle board use and he expects CFI Boards, Inc. to profit by that potential. He feels that selling the properties of the boards and selling the job-fitting capabilities of these boards — rather than just manufacturers' names—is essential in achieving that profit. The customer has only to specify his job requirements, CFI will quickly name the board that will do the job and order it.

Prefinishing Boards Is Good Business

Here's how to do it, as told by Walter McKim, a leader in devising finishing methods. In 1947, at the suggestion of the late Lawrence Ottinger, Mr. McKim started to investigate methods and materials with which to prefinish hardwood plywood panels. Since that time, prefinishing has been extended to hardboard, particle board, lumber and siding by a number of major producers in the United States, Canada and other countries.

WALTER McKIMM
Reliance Varnish Co., Florence, Ore.

Volume of prefinished hardwood plywood wall panels in the past 12 years has exceeded the fondest dreams of its earliest proponents. There are many good reasons for the phenomenal growth of prefinishing, but boiled down to simple terms, there are three outstanding points:

- Great consumer appeal.
- Excellent advertising, coupled with trade association promotion and wider distribution of products.
- Reduction of production costs through automation.

Behind this is the instinctive desire to improve the appearance of all finished products based on the fact that this can be accomplished better at the mill than in the customer's shop.

Utilization of hardboard and particle board is just beginning to show results from sealing and filling only. There is no doubt that relatively simple treatments will continue to upgrade each of these products. Later when complete finishing is employed the ultimate market will be reached.

UPGRADING HARDBOARD in the past has employed oil tempering, prime coating and factory sealing. The latter is becoming popular because it makes the surface easier to paint with very little increase in cost. This also minimizes the harmful influence of surface release compounds, improves adhesion of subsequent topcoats. Because the sealer is usually light in color, it increases the apparent coverage of base coats applied over it.

The method of applying light colored sealer to hardboard is almost universally by roll coater. Immediately after leaving the rolls, the sealer is wet padded with a carpet wrapped oscillator, or squeegeed off. It is then dried in an infra-red oven where the solvents and by-products are released through exhaust ducts. This requires about 40 seconds.

When dry, but still hot, dry buffing tends to iron down most raised fibers.

PRE-FINISHING PARTICLE BOARDS: Of the many types of particle boards on the market practically all require filling to make them paint grade. Each board possesses different properties resulting from the selection of wood particles, binder and moisture resistant additives. For this reason no one cure-all has been found for filling all particle board.

Particle board can be filled best by the doctor blade method. The reverse roll coat method is not satisfactory—or at least a product has not been developed that will completely fill particle board on a reverse roller machine.

The function of particle board filler is threefold:

- To fill voids.
- To seal in moisture stabilizers.
- To promote good adhesion of subsequent coatings.

In the bottom doctor blade method a very fast drying resin type filler is rolled on the bottom of the board, with the filler metered onto the applicator roll to the required wet film thickness. The excess is then squeegeed off by a heavy duty doctor blade, followed immediately by a thin, high-tension blade pneumatically held to the contour of the surface. The material doctored off drops back into the feed bin which is almost totally enclosed to prevent too much loss of volatile solvent.

The boards transfer face down to a conveyor, and are dried by warm air in 60 seconds, with the volatile solvent exhausted from the drying tunnel via ducts. Immediately after drying, the board is put through a wide belt, bottom sander.

After this first pass through the line, it is best to repeat the process, except that a second sanding should not be done. The first sanding removes some scattered areas down to the bare wood. On the second pass, these sections are covered with a resinous filler which acts as a sealer—if left unsanded.

From new organic coating materials available and their future modifications, coupled with new methods for their application and curing, we should be able to prefinish hardboard and particle board economically with coatings far more resistant to wear, color change, burning and household chemicals than our present day high pressure laminate overlays.

As an illustration, the industry as a whole has been conscious of the possibilities of polyesters. This class of resin encompasses a wide range of physical properties and is not new. The fact that it can be applied in a liquid state at 100% solids and converted to a solid in a relatively short length of time makes it a most interesting product. So far considerable research has been devoted to means of application, curing, adhesion to substrate, and surface rubbing and polishing. Results are not final, but are most encouraging and definitely within range of accomplishment in the near future.

Here Are Equipment Costs...

Equipment cost for each operation is fixed with exception that cost of conveyors and ovens depends on lineal speed which in turn is determined by desired daily (8-hour) production. The topcoat oven is capable of handling 4x10-foot panels, a size increasingly in demand, by utilization of the close-pack method. However, there is good reason to consider close packing for drying the sealer and filler if floor space is limited. Approximate costs for basic equipment to finish 40,000 square feet per 8 hours, assuming panels are delivered to the finish room ready to coat, are shown below.

Sealers—	Rollcoater (32C)	$2546.00	
	Unit Heater	250.00	
	Sanding Wheels	950.00	
Filler—	Rollcoater (32B)	2300.00	
	Brushes	1460.00	
	Infra-Red Heaters	3900.00*	
	Sanding Wheels	950.00	
Rel-Var Topcoat—	(2) Rollcoaters	4260.00	
	or 1 Pouring Machine		$8000.00
	(2) Unit Heaters	500.00*	
	Dri-Quik Heaters	8600.00*	
Cool-Off—	(8) Fans, explosion-proof motors, spark-proof fans	800.00*	
Topcoat—	Sanding Wheels	950.00*	
Sanding and Buffing—	Brushes	700.00**	
	Total—	$28,166.00	$31,906.00

*For smaller production lower these figures in the same ratio as desired square footage is to 40,000 square feet.

**Not required if dirt is eliminated. Conveyors, varispeed drives, fans, ducts, etc., will depend on size of operation.

...and Material Costs

OPTION I
(Knotty pine, Lauan, gum, Cativo, etc.)

System	Average Cost (Per M Sq. Ft.)
Glue Size	$ .70*
Face Sealer	5.08
Back Sealer	.93
Filler	3.30
Rel-Var Topcoat	4.78
Total	$14.79

* deduct 30c if sized on face only

OPTION II
(Birch, maple, oak, ash, etc.)

Face Sealer	$ 1.18
Back Sealer	.93
Filler	3.30
Rel-Var Topcoat	4.78
Total	$10.19

OPTION III
(Recommended only on highly polished ash, birch, elm, cypress, etc.)

System	Average Cost (Per M Sq. Ft.)
Back Sealer	$ .93
Filler Stains	2.82
Rel-Var Topcoat	4.78
Total	$ 8.53

OPTION IV
(Clear natural finish— birch, pine, lauan, etc.)

Glue Size	$ .70*
Back Sealer	.93
Face Sealer	5.08
Rel-Var Topcoat	4.78
Total	$11.49

...and Here's Prefinishing at Work

Latest development at Long-Bell division, International Paper Co., Longview, Wash., is a new Microsealing department, the process developed and trademarked by General Plywood Co. Long-Bell now features Microseal's Super Satin Surface on its Flakewood, Ven-O-Wood and factory-built kitchen cabinet door line.

For maximum durability, one additional coat of clear, synthetic finish is recommended. In straight panel application, a coat of wax will suffice.

Long-Bell's decorative economy flakeboard, Flakewall, made from Douglas fir, is reportedly finding a good market for interior walls where it can be used in full 4x8-foot sheets and erected quickly and cheaply. It is adaptable for remodeling jobs and new construction.

In the high quality Flakewood, western red cedar board is popular because of its contrast and three dimensional effect. Flakeboard core sales are up due to industrial uses.

Ven-o-Wood, a laminated sandwich composed of high-grade veneers on flakeboard core, now includes vertical grain Douglas fir.

1 Flakewood boards are sanded by J. M. Nash. Special Automatic sander using 4-0 grit. This man and offbearer are sole employes.

2 After sanding, buffing machine, center, prepares surface for application of Microseal by Black Bros. roller coater. Heat and pressure melt lignin, allowing pastic seaer ta penetrate.

3 Alcohol carrier, having done its job when plastic penetrates board, is removed in evaporator section ahead of Moore dryer oven. Second and third buffing takes place in two additional machines.

Better Resins for Better Boards sought by major glue manufacturers. Improved phenolic resins may supplant urea binders in particle board. Advantages are: • Greater flexural strength retention. • Strong board-metal bond. • Less formaldehyde odor.

Hardboard, flakeboard and particle board are being tested, researched and examined in the nation's adhesive manufacturers' laboratories with an unequalled intensity of purpose. The dual goal:

• Improved phenolic resins which will outperform urea at low cost.

• Bonding of board with wood and non-wood products.

The amount invested in personnel, equipment and laboratory facilities by the manufacturers of adhesives is, literally hundreds of times the amount an individual board manufacturer could expend on a similar purpose. Of course, the industry benefits from this research set-up, but, as the industry advances, so do the companies sponsoring the research. It is a mutually helpful association.

To bring readers of THE LUMBERMAN up to date on progress in the board adhesives field, the editors present the following round-up of new products, projects and research news.

American-Marietta Seeks Multi-Species Resins

As more species find their way into board manufacture, the problems of the adhesives manufacturer increase in direct proportion. Resins can be tailored to fit single species requirements. But it is better, and cheaper, if one resin can do a good job with several species. This is the line of attack American-Marietta follows in the development of adhesives for alder, poplar, maple, lodgepole pine and other formerly little-used woods.

The company's new million-dollar laboratory is an important part of a development policy which takes two parallel paths. One is devoted to the present, providing special services—and more of them—for customers, and the other is a research program devoted to the future. The development of new resins for wood products falls in the latter category.

Another of the company's projects is the search for an efficient adhesive to bond boards to other materials. Said H. M. Preusser, technical services manager, "Our developmental work in this field is intended to provide the board industry with the means to add more value to the basic board product. Thus, a producer who successfully can manufacture and market a panel consisting of wood and metal or plastic into a curtain wall, or other engineered finished products will be able to develop a more profitable outlet for his board."

Reichold Develops Resin For Exterior Particle Board

A new "Forasite," is a phenolic resin with qualities which make particle board suitable for use as exterior type board. The flexural strength retention in boards made from this new Forasite is rated at over 50%, following accelerated aging tests (A.S.T.M. standards). This represents a considerable improvement over similar boards bonded with urea resins.

RCI is developing phenolic resins which will produce particle board at a total manufacturing cost equal to that currently required for boards made with urea resins.

The newest, commercially available resin in Foramine SW-1896 for particle board. According to RCI, the formaldehyde odor in boards made from Foramine is less than that occurring in boards made with the earlier resins. Depending on wood species, it can be used with or without catalyst.

A number of special projects are being researched at RCI. At the Charlotte, N. C., laboratory, a study is being made on chemicals to be sealed into the board prior to pressing to produce a fire retardant board. Another project is that of perfecting termite-resistant additives for board.

In other laboratory tests, RCI has employed a new paper glue line adhesive, SW-2000 Plyophen—PGL, for one-step manufacture of veneer-overlaid dry process hardboard. PGL has also been used to join hardboard to metal surfaces. The company is currently developing compounds to provide better weatherability and, by such tempering action, give hardboard a wider end use range.

The company has developed a specialty slide rule which is used by many

3-CYCLE HOT PRESS with hydraulic pressure up to 1000 psi and steam-heated platens up to 500° F. produces wide range of sample boards at Monsanto lab in Seattle. It is being used to develop phnolic for particle board.

LAB-BUILT BLENDER at Borden's Seattle research center is new addition to board manufacturing research. In this machine space of blending cylinder can be altered to closely resemble large scale equipment of full operation.

INTERNAL BOND TESTING of experimental board in Seattle lab of Reichhold Chemical. Boards are prepared according to ASTM and West Coast Adhesive Manufacturing specs so all tests can be compared for accurate results.

SAMPLING of new experimental resins is made at American-Marietta pilot plant in Seattle, Wash. Pilot plant duplicates manufacturing techniques of larger chemical manufacturing facilities, also located in Seattle.

board plants. Showing full production line operation of a plant, they help speed the calculation of modulus of rupture and specific gravity for board quality control.

Urea Resin Research Pushed by Borden

Close liaison between customers and the company laboratory through Borden Chemical Co.'s field technical service man has brought about extensive use of several reliable urea resins for particle board, such as Casco resin WW-17, WW-21 and WW-22. Improved internal bonds and less formaldehyde odor have been the major values to the industry and board users.

The most recent example of improved resins is Borden's new self-curing liquid urea resin "Auto-Set 31," which is self-setting. According to company officials, Auto-Set 31 is considered a major technical breakthrough in the field of particle board production. This resin was especially designed for the multi-platen process. The result of joint efforts of Borden's Central Research Laboratory in Philadelphia and the Resins and Chemicals Sales Development Laboratory at Bainbridge, N. Y., Auto-Set 31 is primarily intended for operations using a catalyst system. It eliminates catalyst mixing and glue mixing equipment as well as possible errors in mixing.

Laboratory tests and field production runs show that this product, under ideal conditions, provides up to 25% greater internal bond while reducing press cycle time up to 20%. In addition, it minimizes surface precure, reduces formaldehyde fumes before, during and after pressing, and allows for uniformly consistent particle board manufacturing operations. Molecular size of the resin polymer is adjusted to give a maximum coverage and minimum penetration.

Studies are continually underway on improving durability and other board properties. Several approaches to the development of a durable particle board binder are necessary. One is an analysis of adhesive failure in the board. It emphasizes special knowledge of polymer chemistry and physics, adhesive and cohesive forces, particle geometry and size distribution and the stress developed between individual particles in a board with changes in moisture and temperature.

The full line of Borden phenolic resins for dry, semi-dry and wet process hardboard is given attention in research, development and customer relations equal to that devoted to particle board and flakeboard. Basic research covers studies on particle size, absorption rates and resin molecular size to help provide improvements in board stability, strength properties and surface characteristics.

The Borden Chemical Company maintains laboratories for the wood and particle board industries at Philadelphia, Pa., Bainbridge, N. Y., Fayetteville, N. C., Seattle, Wash., and Dominguez, Calif.

New Tests Standardized

A series of test methods has been established by the Technical Committee of the West Coast Adhesive Manufacturers. Known as the West Coast Manufacturers Test Method No. 5.1, it measures the internal strength of the board perpendicular to the surface rather than the physical properties of the resin used in board manufacture.

Free copies of the test method may be obtained by writing to the committee chairman, Russell K. Stensrud, c/o Reichhold Chemicals, Inc., P. O. Box 3547, Seattle 24, Washington.

Any qualified technician whose firm is associated with the board industry, but is not at present on the mailing list of the Technical Committee, should write to Stensrud.

Monsanto Studies Phenolic Resin for Flakeboard

During the last year, Monsanto Chemical Co.'s Western Adhesives research center in Seattle, Wash., produced a number of new and improved resins for the manufacture of wood composition boards. The emphasis was on the modification and betterment of urea resin binders, since urea is so widely used because of its comparatively lower cost.

High strength, lower formaldehyde release, faster acting, higher internal bond and lower water absorption are the benefits claimed for improved urea resins. The durability of the resin itself has been increased.

However, with all these improvements, the goal of the laboratory has been the development of a phenolic resin to replace urea formaldehyde in flakeboard manufacture. Montesano's first product in this line was PF 575. Now, after extensive field testing, Montesano expects several greatly improved phenolics to be commercially available in 1959.

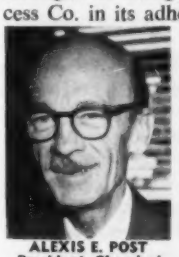
Streamlined research permits more attention to customer service, and gives board manufacturers the benefit of laboratory findings in the production and marketing of new basic items and specialties. At both the Seattle, Wash., and Santa Clara, Calif., research centers, Monsanto recently has added new personnel and more equipment for work on wood boards.

Monsanto is concerned with two separate approaches to improvement of surface qualities of board products. In the surface coating section of the Plastics Division, the company works with paint manufacturers and suppliers in the field of factory pre-finishes such as sealers and prime-coats. And as a supplier to the board industry, Monsanto is interested in developing resins for making a board with smoother, harder and more uniform surface.

"Pentachlorophenol is now incorporated into particle board resins for termite resistance of the finished board. This new blending recently has become commercially available."

Chemical Process Studies Adhesive, Particle Blend

A program of steady expansion through research guides Chemical Process Co. in its adhesive developments.



ALEXIS E. POST
President, Chemical Process Co.

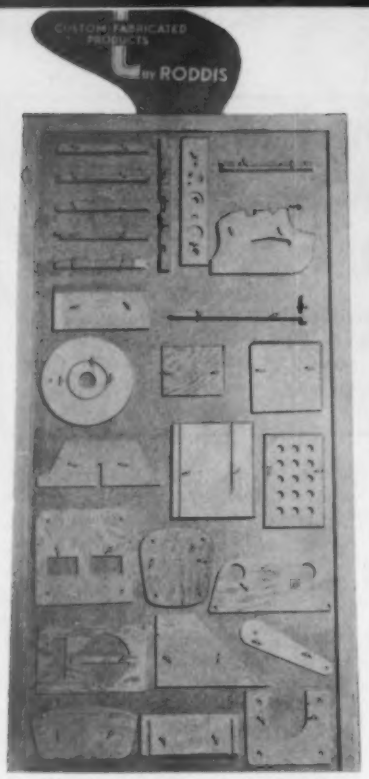
With extensive experience in the production of complex polymers, the company offers to the board industry a variety of resin adhesives. Special formulations of both phenolic and urea resin are provided. The firm specializes in research and field service to help its customers gain the most effective results from CPR adhesives.

The company's chemists and technologists are engaged in a basic study of the manufacture of wood composition board. Particle geometry has proven of special interest. A study of the effect of a particular formulation of adhesive in combination with various forms and blends of particles has provided valuable data.

Factors relating to moisture content in particles and fibers, especially with respect to press cycle technique, have proven beneficial in resin formulation and have resulted in higher production of more uniform quality board products.

The Adhesive Division laboratory is expanding rapidly to cope with the research tasks at hand. One group is devoted exclusively to basic applied research, while another group handles product development and quality control projects for customers.

The company's major interest is in the more complex resinous products.



CUSTOM PRODUCTS made by Roddiscraft shown here are from plywood and Timblend.

SPEAKER FRONT of Timblend being turned out on Greenlee universal spindle multi-boring machine is checked by plant manager Harry Chase, right. Timblend enhances Hi-Fi reproduction.

Fabricating Plant Boosts Sales

by machining board and plywood panels to customer's exact specifications.

The concept behind establishment by Roddiscraft, Inc. of a fabrication plant at Arcata (where the company manufactures Timblend and plywood) was to create a lever to increase basic panel sales. The plant produces refined wood and board products which the customer could not so easily nor economically produce at his own plant and the result is a rising sales curve for basic panels in the area Roddis serves.

One customer saved some 42% on freight costs on speaker mounts by ordering from Roddis' fabrication plant and paying only for what would be used in his product. This saving is based on costs he would have sustained had he ordered standard panels, paid all shipping charges and then produced the items that he needed.

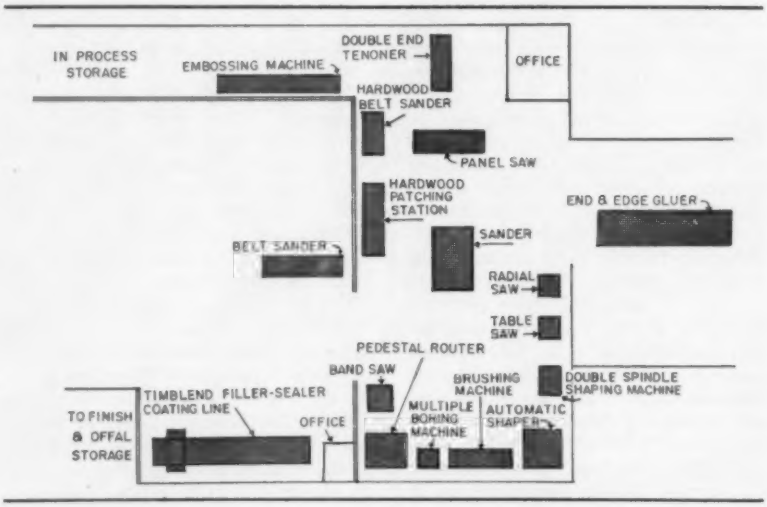
ARRAY OF ITEMS now produced is indicated by the display shown in the accompanying photograph. These are just a part of the total output. At the outset, Roddis produced Texture-1-11 plywood, brushed and embossed plywood, cut-to-size Timblend and plywood, chair seats and some other items.

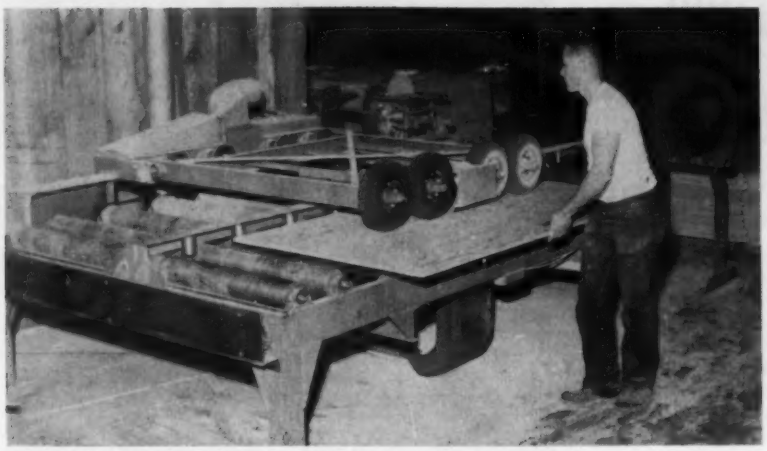
Roddis divides its production broadly as specialty items: T-1-11, utility table tops, brushed plywood, basic panels and hardwood veneered panels, etc.; and fabricated items, such as chair seats, automotive and marine patterns, speaker mounts, ammunition and/or electronic tube packing components and others.

Plant manager Harry Chase believes it is almost a necessity to operate a specialty panel department in conjunction with a machining operation. For example, a machining—or fabricating—job might require a set-up time of 1.5 hours, with an actual production run of only 25 minutes. Panel production can be used to smooth out labor and work flow dips and peaks.

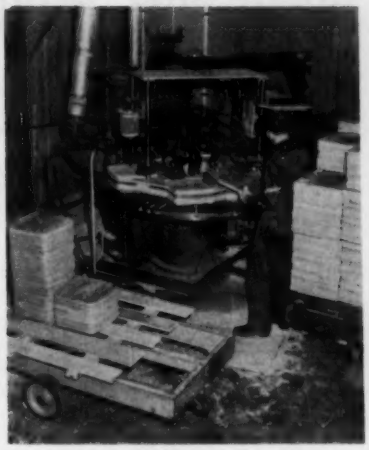
TOLERANCES OF 1/32" is maintained for most production in the plant. A hole for a speaker must be exactly as ordered, or the piece is worthless. And, similarly, Roddis cannot afford rejects. A mistake on a basic panel in a cut-to-size operation will probably produce one or more salvageable pieces. A fabricated item, improperly turned out, is a complete loss.

Thus, constant attention to quality control is essential. Roddis has a lead set-up man who sets all machines. Once his machine is set, each operator makes frequent checks on the output. Follow-up action by Mr. Chase, by plant superintendent Earl Sayers and by the set-up man is routine.





CUT-TO-SIZE operation utilizes C. F. Machinery Co. panel saw. Dark strip on near end guards drive chain which moves backstop rollers, for adjustment for varying width cuts.



IN ONE OPERATION Onsrud shaper bores, shapes, and bevels plywood chair seat.

Upon receipt of an order, Mr. Chase makes a working drawing and decides which machine or machines will be used. Some dozen or so machines might be used for a particular job, but the profit and efficiency come out of determining how the job will be fitted into the production schedule and which machines will turn it out with the maximum recovery from the basic panel or section.

Shipment of the finished order is scheduled at the customer's convenience so that the items may be moved right into his own production line with greatest efficiency.

TIMBLEND IS BEING USED increasingly as a furniture core board. At the main plant, Roddis applies hardwood veneers to Timblend and the pieces are later cut to size or shape at the fabrication plant. Among the species being used are African and Philippine mahogany, cherry, sen, walnut, red and white oaks and red and white birch.

In the plant's Raybond edge gluer, the company is also gluing alder strips around Timbled cores. The electronic gluer is important not only for gluing up special sizes of Timblend panels, but also as a recovery tool. Timblend offal is glued up to standard panel size or may be glued to specific order sizes.

The board is used in thicknesses of from ⅜ to 1½ inches. Edge-glued production may range from 33 to 67 inches in width and up to 100 in length. End glued stock is produced in unlimited lengths, from 12 to 67 inches wide.

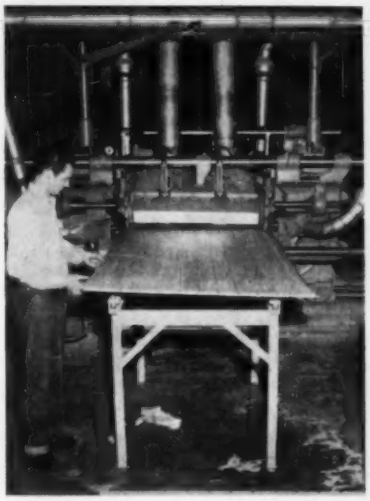
Both Timblend and plywood are used in production of the various industrial parts which Roddis produces: speaker fronts, stool bases, reel ends, chair seats, assorted beveled and T&G forms and templates. Considerable volume of production is still given over to Texture-1-11, embossed plywood, standard Timblend panels, filled and sealed, brushed plywood, simple cut-to-size parts and utility table tops.

Because of the kind of operation, no simple, straight-line production line is feasible. The accompanying floor chart shows locations of the machines. The present layout is close to a final one. There will, of course, always be some modifications.

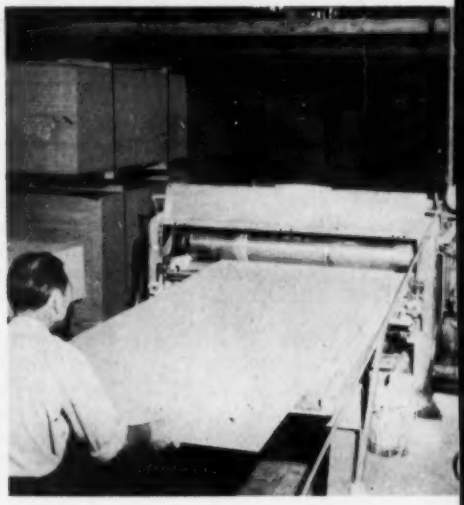
As in other lines, users of board and plywood are more and more interested in receiving factory refined products, to cut costs, and speed up their assembly times. The specialty and fabrication production at Roddis' plant effectively fills that need for Roddis' customers. And new volumes of basic panels, which might not otherwise do so, are moving into sales channels.

BAND SAW UNIT shapes circles from plywood stock for use as stool bases.

TEXTURE 1-11 is grooved on pass through Greenlee double end tenoner.



TIMBLEND IS FILLED AND SEALED by a modified Black Bros. roller coater.



Resin-Wax Proportion Held Constant by Electronic Guard System

Volumes of wood residues entering a particle board production line are difficult to control, therefore addition of quantities of wax and resin must be varied to fit the volume of wood entering the line.

Resin and wax are high-cost items and their conservation is as important as their constant proportioning.

Plant superintendent Ralph Peinecke, Pope & Talbot, Inc., Oakridge, Ore., saw this difficulty and called in engineers John Balint, Steve Batori and Fred Keppel of Controls & Communications, Eugene, Ore., to work on the problem.

In addition to maintaining a constant percentage of resin and wax flow, the problem was further complicated by the fact that the only point of wood measurement was as the wood entered the plant, some 60 feet, and 30 seconds of flow-time away from the mixing chamber.

Controls & Communications used the latest of electronic techniques in solving the problem. Here's how the system works:

(1) Wood is weighed by a Merrick Weightometer as it leaves the dry shavings or flake storage silo.

(2) The Weightometer electric current signal representing wood weight is transmitted to a time delay device where it is stored in two-second stages for introduction into the system 30 seconds later, when the measured wood reaches the mixing chamber.

(3) As the wood arrives, the signal is sent to the flow-rate potentiometer where the desired resin percentage factor is applied.

(4) The flow rate potentiometer signal is fed to the amplifier driving the resin and wax pump motors.

(5) The motor drives the pumps at a rate to deliver resin and wax at the proper rate for the wood supply entering the system.

CHECKS AND BALANCES are built into the system to make it virtually fool-proof. A tachometer mounted on the pump shaft provides a feedback source for the pump-motor amplifiers. The same tachometer serves a pumping rate recording chart on the central control panel. In addition, a panel-mounted counter, actuated by the positive displacement pump, totals gallons of resin and wax consumed by counting pump strokes.

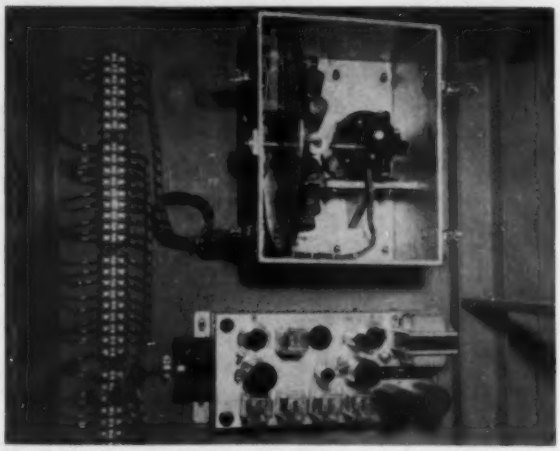
An hourly manual check of the system is made by comparing the gallons of additives pumped with the amount of wood entering the system as shown by the Weightometer totalizer.

AN ALARM SYSTEM sounds a bell under one or more of the following conditions: no wood entering the system, deviation from the set-in percentage, and for over or under pump pressures. The control system is interlocked with the conveyor system so pumping will stop when conveyors are stopped.

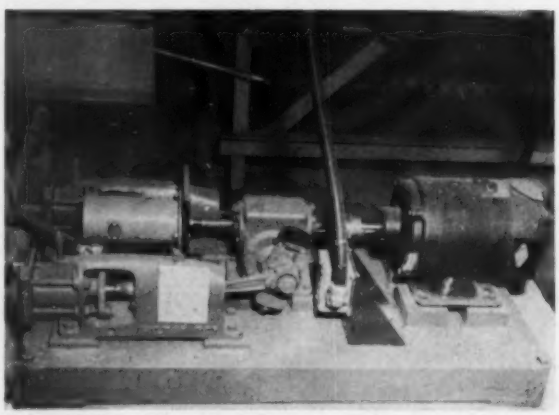
If the system is shout down for some time, the wood-weight memory will still pick up where it left off to inject the proper amount of additives at the proper time.

In operation, the operator merely sets his desired percentage of additives at the control panel. Percentage of resin and wax solids is held constant, regardless of varying wood weights.

CONTROL PANEL SECTION shows Honeywell wood rate recorder, center. Note wood flow variance which controls flow rate of additives. Other recorders include resin and wax gallonage flow rate, resin and wax gallonage pumped, and resin and wax to wood percentage.



TIME DELAY DEVICE behind one of control panels. Wheel revolves once every 30 seconds with signal from Weightometer stored in 2-second increments in condensers, allowing 30-second delay while wood travels from Weightometer to mixing chamber.



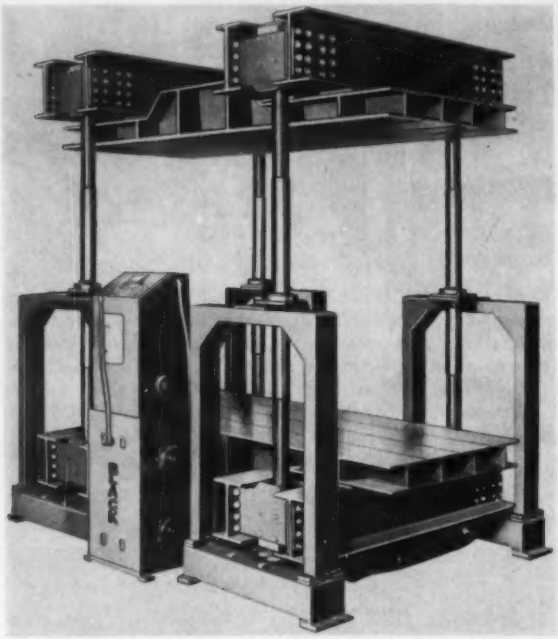
WAX PUMP is Milton Roy unit driven by GE Thymatrol ½-hp motor. Shaft-mounted tachometer drives recorder chart on board as well as providing feedback to Thymatrol amplifier. GE limit switch, center, actuates stroke counter on control board.

PERCENTAGE READING is obtained from a computer signal that actually divides the pumping rate signal by the wood rate signal and records the percentage on a strip chart. The plant wood technologist sets a constant into the computer which corrects for solids content of the additives and moisture content of the wood so that the recorded percentage actually represents the solids to dry wood ratio

NEW EQUIPMENT

Serrated flaker knives . . . press handles thick loads . . . unit cuts or textures . . . new chippers, hogs.

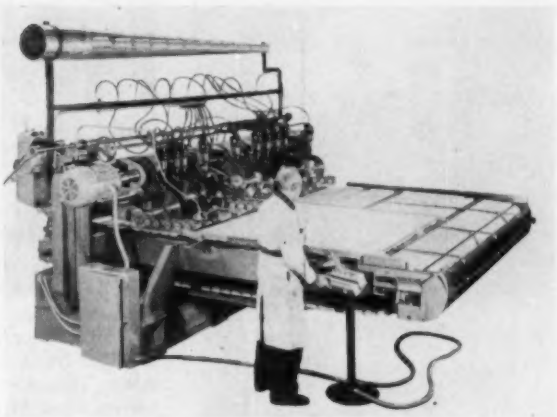
SERRATED FLAKER KNIVES from The Ohio Knife Co., Cincinnati, O., have teeth one-inch apart. Flakes are cut from logs at an average thickness of 15/1000th inch. The flakers can deliver 6000 pounds of flakes per hour. The knife edges are exceptionally hard, a requirement in producing 15/1000th inch thick chips. Construction is of high carbon, high chrome steel, specially hardened and then tempered.

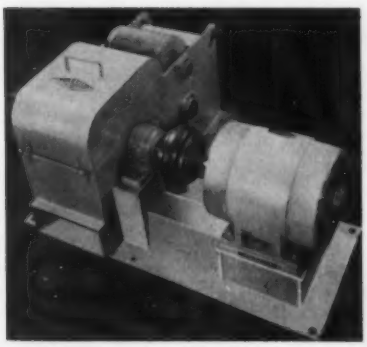


ELECTRICAL PRESSES produced by Black Bros., are adaptable to pressing insulating board into thicknesses above average. They have four large synchronized vertical screws which operate in unison through a special drive. The unit pictured is used by Insulite to press glued products such as roof deck, roof form boards, roof insulation and other products in thicknesses ranging from ½ to 5 inches. It can handle an over-all sized load 4 feet wide, 12 feet long. The press is installed so the lower platen is flush with the plant floor when the press is open. A daylight opening of 80 inches is obtained. The flush floor arrangement allows use of special skids for loading the press.

CUTTING OR TEXTURING can be accomplished on the new Jenkins 191 slat bed with its 10 saw-equipped Uni-Lifts. The Uni-Lifts can be individually raised or lowered from a portable remote control panel, allowing the operator to select the number of saws for any operation. Remote control permits changes in trim size or texture pattern without stopping production. Each Uni-Lift is horizontally adjustable along the power shaft providing further trim width selection and greater variety of texture design.

Surface roller bearings are provided for each Uni-Lift arm to gauge cutting depth to the surface of the panel. In a texturing operation, roller bearings automatically raise or lower the saw blade to assure a constant groove depth the entire length of the panel. All holddowns remain effective regardless of the position of the Uni-Lift arm. The unit is made by the Jenkins Woodworking Machinery division of Kohler-Joa Corp., Sheboygan Falls, Wis.



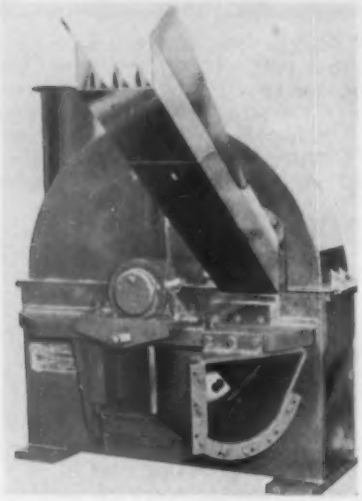


12-INCH HOG by Lamb-Grays Harbor Co. requires a minimum of floor space. The small units can be installed at each machine requiring one, minimizing residue transport. Numerous feed arrangements are available for the units.

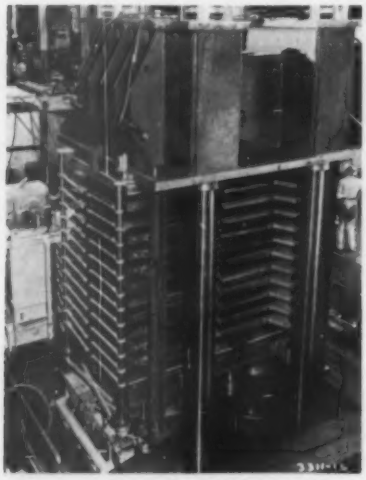
CONVERTED CHIPPER by C.M.&E. Norman works as flaker, will also produce shreds. The change is accomplished by different grinding of knives and the manner in which wood is positioned in spout.

NEW EQUIPMENT

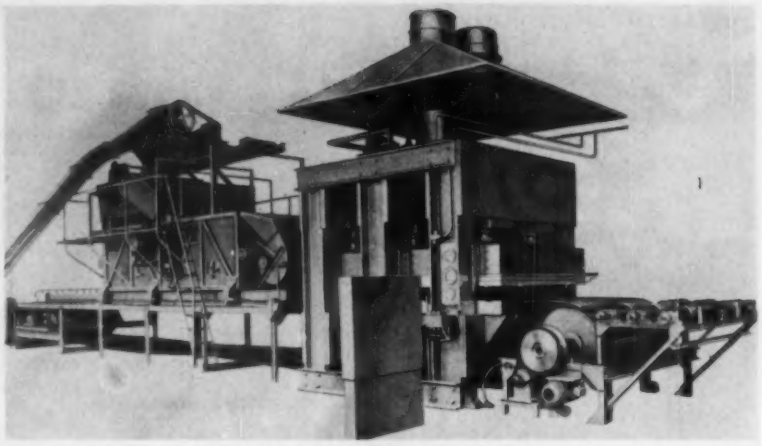
New flakeboard system machinery . . . chipper with refeed . . . panel-forming equipment



SODERHAMN CHIPPERS in the 48- and 56-inch horizontal units now have a 9-inch rechipper infeed spout to handle oversize chips from the screen, cut-offs and similar scrap. The spout has three large channels bottomed to feed oversize chips correctly to the knife.



MULTI-PLATEN hot press by Washington Iron Works, Seattle, Wash., includes automatic press loading and unloading equipment to make up complete forming line for dry process hardboard. With no caul plates, special arms kick finished boards from between the platens upon completion of curing. Upward-acting cylinders keep equal pressure on all platen.



BISON SYSTEM FLAKEBOARD MACHINERY distributed in the United States by Soderhamn Manufacturing Co., Talledega, was developed by a German furniture producer. An air-separator chip spreader at the automatic mat-forming station concentrates larger chips to the center of the board, fines to the exterior to give a graduated three-layer effect. The system has an automatic glue-spraying system which proportions the amount of glue applied to small and large flakes. The system can be adapted to outputs as small as 17,000 square feet per 24 hours. A single opening press is shown in the photo; multi-open installations are available.

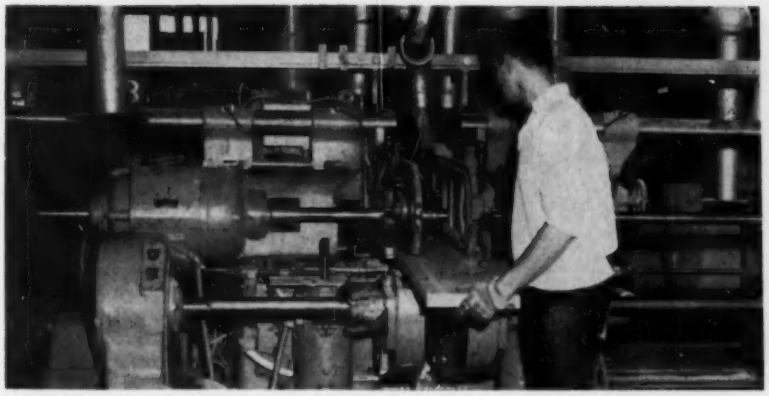
PRESSING DISSIMILAR MATERIALS is possible in a new rotary press developed by Black Bros., Mendota, Ill. The presses are available in a range of widths from 8 through 122 inches. Pressure is applied to the top roll on some of the smaller machines by compression springs. Generally, a pair of vertically disposed pneumatic cylinders apply the pressure.

In the picture above, a 104-inch wide press is combining gypsum board with aluminum. Note large compressed-air cylinders on top of machine. Two strings of roller conveyor are arranged, both at the infeed and outfeed of the press.

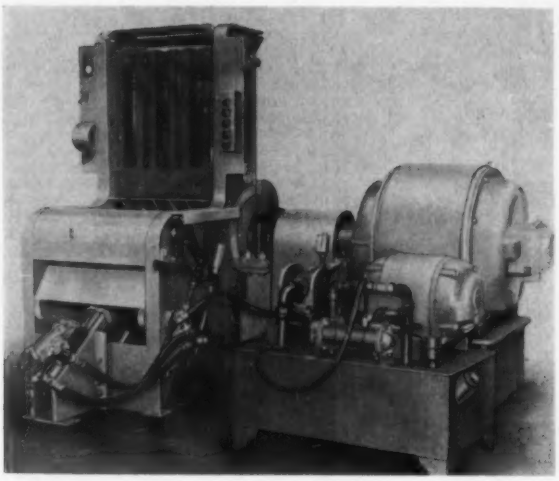
Smaller press at right uses compression springs for compression. It is shown combining preliminarily-dimensioned hardboard with mortised and tenoned frames.

On the pressure machine, maximum pressure of 7700 pounds can be applied. Pressing speeds from 10 to 60 feet per minute can be utilized where the unit is fitted with a variable-speed drive. The starting and stopping mechanism has a patented safety control to protect the operator and the stock. The operator can start, stop or reverse the press from either side or end of the machine by touching either one or two horizontal control bars.

Developments to control formaldehyde fumes . . . new flaking machine . . . specialty machine for trimming boards.



TRIMMING PARTICLE BOARD PANELS to smaller sizes is quickly accomplished on Greenlee double-end specialty machine. The unit pictured splits and edge-trims 18-inch wide boards, fed through three high. Resulting strips will be eight inches wide.



FLAKING MACHINE developed by Newman Machine Co. handles logs up to 10 inches in diameter, 24 inches long. Output is 25,000 pounds green flakes, 14,000 pounds dry flakes per hour. The knife grinding attachment is so arranged that knives can be set out and ground without removing knives or cutterhead. Available for the machine is an automatic feed and remote control. Floor space for the unit is 5 feet 6 inches by 7 feet 6 inches.

RELEASE OF FORMALDEHYDE from particle board is studied by this Beckman gas chromatograph. The unit teams with a Minneapolis-Honeywell recording instrument in laboratory research work. The units are in wide use among the adhesive manufacturers in their programs to improve resin quality. The unit pictured here is at the Reichhold Chemical laboratory.

Control of Formaldehyde Fumes

Textile Adjuncts Corp. has announced a new resin co-polymer, Poly-Coupler (X353) which controls free formaldehyde fumes rising from urea, and melamine-formaldehyde, as well as triazone resins.

The problem of free formaldehyde fumes generating from cured resin systems in finished board is called "resin decay," which implies that the finished resinated material re-liberates excessive fumes in areas surrounding stored or installed material.

In the case of particle board manufactured from urea-formaldehyde resins, a number of customers have complained that the cured board, under normal temperature and humidity fluctuations, gradually re-liberated, in increasing amounts, formaldehyde fumes, resulting in discomfort to em-employees or customers.

Poly-Coupler co-polymers, being liquids, aqueous or anhydraous, are added directly to the resin before application to chips immediately before cure. The manufacturer says it has no diverse effect on other properties of the finished product. It stabilizes the resin system against adverse temperature and humidity conditions. The result is a more stable and acceptable product.

The product has another important advantage: it offers control of free formaldehyde fumes within a plant or processing area where a resin system is employed. This eliminates employee discomfort and irritation from fume exposure.

Samples and literature are available from Textile Adjuncts Corp., paper and plywood division, 876 Pacific Street, Brooklyn 38, N. Y. Interested mills should state type resin and if a water or solvent system is used.

THE LUMBERMAN'S 1959 DIRECTORY OF

Board Producers

- Hardboard
- Flakeboard
- Particle Board
- Insulating Board

HARDBOARD

ABITIBI CORP.

Home Address: Penobscot Bldg., Detroit, Mich.
Plant Address: Alpena, Mich.
Personnel: D. W. Ambridge, Pres.; P. E. Roberts, Exec. Vice-Pres.: O. B. Eustis, Mill Mgr.: E. J. Schultz, Sls. Mgr.; R. E. Paul, Control Supt.; W. C. E. Wood, Plant Engr.
Production: (Rated Annual Capacity) 200,000,000 sq. ft. 1/8-1/2-inch basis hardboard and insulation board.
Rated Capacity (Tons): 240 daily.
Process: Wet, S1S and S2S, hardboard and insulation board.
Panel Sizes: 4x16 feet.
Thicknesses: 1/10; 1/8; 3/16; .220; 1/4; 5/16; 3/8; 1/2; 3/4; 25/32 inches; and multiples thereof.
Raw Material Used: Pulpwood.
Volume (from logs): 100%.
Trade Names: Abitibi Plateboard Hardboard.
Percent of Product for Own Use: None.

ABITIBI POWER & PAPER CO., LTD.

Home Address: 408 University Avenue, Toronto, Canada.
Plant Address: Sturgeon Falls, Ontario, Canada.
Personnel: D. W. Ambridge, Pres.; R. E. Costello, Gen. Mgr. panelboard div.; A. L. Farnsworth, Mill Mgr.; W. T. Gauthier, Supt.; A. W. Gray, Sls. Mgr.; E. A. McLean, Control Supt.; P. M. Rebin, Plant Engr.
Production: (Rated Annual Capacity) 61,660,000 sq. ft. 1/8 inch basis.
Process: Wet—S1S.
Panel Sizes: All standard sizes.
Thicknesses: 1/10; 1/8; 1/4 inches.
Spec. Gravity: 0.88; 1.02.
Colors: natural and woodgrains.
Raw Material Used: Wood pulp and sawmill chips.
Uses: industrial and building, underlayment, decorative specialties.
Specialty Items: tempering; decorative specialties.
Percent of Product for Own use: None.

ANACORTES VENEER INC.

Hardbord Div.
Anacortes, Wash.
Personnel: Earl Cheldelin, Pres.; T. L. Bentley, Mgr. & Sls. Mgr.; Arthur C. Carlson, Supt.
Production: (Rated Annual Capacity) 36,000,000 sq. ft. 1/8 inch basis.
1958 Production: 25,000,000 sq. ft.
Rated Capacity (Tons): 50 daily.
Process: Semi-dry.
Panel Sizes: 4x8.
Thicknesses: 1/10; 1/8; 3/16; 1/4 inches.
Spec. Gravity: 1.00 to 1.10.
Colors: blonde.
Characteristics: Smooth one side.
Raw Material Used: core blocks & veneer.
Volume (from mill residues) 8,000 tons annually.
Uses: Industrial remanufacturing.
Specialty Items: overlayment, perforating.
Trade Names: Armorbord; Armorwood.
Percent of Product for Own Use: 1%.

BOWATER BOARD CO.

Div. of Bowaters Southern Paper Corp.
Catawba, S. C.
To be completed June, 1960.
Personnel: John G. Robinson, Mgr.; Joseph R. Hahn, Sls. Mgr.
Production: (Rated Annual Capacity) 160,000,000 sq. ft. 1/8 inch basis.
Rated Capacity (Tons): 200 daily.
Process: Bowater dry process.
Panel Sizes: All sizes up to 4x16 feet.
Thicknesses: 1/10; 1/8; 3/16; 1/4; 3/8 inches.
Characteristics: S2S.
Raw Material Used: hardwoods.
Volume (from logs): 44,000 cords.
Trade Names: Bowater Board.

CANADIAN FOREST PRODUCTS LTD.

Pacific Veneer & Plywood Div.
Home Address: 999 West Pender St., Vancouver, B. C.
Plant Address: Ft. of Braid St., New Westminster, B. C.
Personnel: J. G. Prentice, Pres.; D. M. Zilm, Gen. Supt.; G. Burgon, Supt. Hardboard; W. E. Burns, Sls. Mgr.; T. Roubicek, Research Dir.
Process: Chapman.
Panel Sizes: 4x8 feet.
Thicknesses: 1/10; 1/8; 1/4; 5/16; 3/16 inches.
Raw Material Used: fir veneer waste.
Uses: industrial, commercial uses, panelling and underlayment.
Specialty Items: tempering; prefinish; priming and grooving.
Trade Names: PV Hardboard, PV Square-tex; PV Plank Board; PV Colonial Board.
Sales Agents: Vancouver Plywood Co., P.O. Box 720, Vancouver, Wash.

CASCADES PLYWOOD CORP.

Home Address: 1316 Public Service Building, Portland, Ore.
Plant Address: Lebanon, Ore.
Personnel: C. W. Fox, Pres.; B. V. Hancock, Vice Pres.; Jack C. Brande, Plts. Mgr.; P. L. Kvale, Supt.; Orvie M. Johnson, Prod. Mgr.; J. R. Stillinger, Tech. Dir.; J. Pearl, Plant Engr.; Francis Phibbs, Sls. Mgr.
Production: (Rated Annual Capacity): 48,000,000 sq. ft. 1/8 inch basis.
1958 Production: 42,000,000 sq. ft.
Rated Capacity (Tons): 75 tons daily.
Process: Cascades, dry fiberizing, forming & pressing—particle type.
Panel Sizes: 4x8 feet.
Thicknesses: 1/10; 1/8; 3/16; 1/4; 5/16; 3/8 inches.
Spec. Gravity: (3) ranges .98-1.18.
Colors: light-blond.
Characteristics: high internal bond strength & excellent machining characteristics.
Percent into Cut-up Sizes: 10%.
Raw Material Used: Douglas fir chips.
Volume (from mill residues): 20,000 tons annually.
Uses: core stock for high pressure laminates & fine veneers. Base for print grain furniture finishes.
Specialty Items: striating; overlayment; tongue & groove; prefinish; perforating, sanding, sawing.
Trade Names: Lebanite, Lebanex, Perfo-Square, Perfo-Round, Stri-Board.
Percent of Product for Own Use: 10%.
Sales Agents: Cascades Plywood Corp.

EVANS PRODUCTS CO.

Home Address: Plymouth, Mich.
Plant Address: Corvallis, Ore.
Personnel: E. S. Evans, Jr., Pres.; Piotr Zenczak, Mgr. & Tech. Dir.; Earl Chapman, Supt.; W. F. Ritchie, Sls. Mgr.; W. Davis, Plant Engr.
Production: (Rated Annual Capacity) 30,000,000 sq. ft. 1/8 inch basis.
1958 Production: 30,000,000 sq. ft.
Rated Capacity (Tons): 30 daily.
Process: Wet.
Panel Sizes: 4x8 feet.
Thicknesses: 1/10; 1/8; 3/16; 1/4; 5/16 inches.
Spec. Gravity: 0.9.
Colors: light blond.
Percent into Cut-Up Sizes: 5%.
Raw Material Used: Douglas fir chips.
Volume (from mill residues): 15,000 tons annually.
Specialty Items: striating; tongue & groove; tempering; prefinish; corrugated; punch.
Trade Names: Evanite.
Sales Agents: Fiddes-Moore Co.

FOREST FIBER PRODUCTS

P.O. Box 68, Forest Grove, Ore.
Personnel: Harold Miller, Pres.; F. M. Hughes, Mgr.; Gene Tower, Supt.; Henry Jacobsen, Sls. Mgr.; Keith Kruse, Tech. Dir.; Clyde Mason, Plant Engr.
Production: (Rated Annual Capacity) 60,000,000 sq. ft. 1/8 inch basis.
Rated Capacity (Tons): 150 daily.
Process: Wet.
Panel Sizes: 4x16 feet maximum.
Raw Material Used: long fiber Douglas fir chips.
Specialty Items: Striating; etching; overlayment; tongue & groove; tempering; prefinish.
Trade Names: Forest 3/8" panel; Forall; Forestex; Sandalwood; Punched Board; Thrif-tone; Tee-N-Gee; Random Plank; Underlayment; Thriftwood.

GEORGIA PACIFIC CORP.

Home Address: Equitable Building, Portland, Ore.
Plant Address: Coos Bay, Ore.
Personnel: R. B. Pamplim, Pres.; J. Stronko, Mgr.; A. Wehrle, Supt.; W. Walling, Sls. Mgr.
Rated Capacity (Tons): 100 daily.
Process: Dry process.
Thicknesses: 1/10 to 3/8 inches.
Raw Material Used: wood chips.

KROEHLER MANUFACTURING CO.

Home Address: Naperville, Ill.
Plant Address: Meridian, Miss.

MASONITE CO. OF CANADA, LTD.

Home Address: Sun Life Building, Montreal, Quebec, Canada.
Plant Address: Gatineau, Hull Co., Quebec, Canada.
Personnel: R. M. Archer, Gen. Mgr.

MASONITE CORP.

Home Address: Chicago, Ill.
Plant Address: Ukiah, Calif.
Personnel; John M. Coates, Pres.; William A. Cotton, Vice-Pres. in chg. of Mfg.; Paul B. Shoemaker, Vice-Pres. Sls.; F. O. Marion, Gen. Sls. Mgr.; Donald J. Gray, Vice-Pres.; Dean Thatcher, Gen. Mgr., Ukiah; Orcutt W. Frost, Dir. of Research & Development; Frank Lesniak, Chief Engr.
Production: (Rated Annual Capacity) 200,000,000 sq. ft. 1/8 inch basis.
Process: exploded wood fiber process, wet and semi-dry type.
Panel Sizes: up to 5x16 feet.
Thicknesses: 1/10 to 2 inches.
Spec. Gravity: 0.9—1.4.
Colors: brown.
Characteristics: smooth, dense, wear-resistant surface.
Raw Material Used: hardwood and softwood.
Uses: many in building and industry; walls, ceilings, cabinets, underlayment, siding, decorative specialties, bathroom and kitchen "tiles," concrete forms, etc.
Specialty Items: striating, groove, tempering, embossed patterns, grooving, priming, printing.
Trade Names: Masonite Presdwood, Tempered Presdwood, Panelwood, Underlayment, Tempered Duolux, Dorlux, Tempertile, Leatherwood, Ridgeline, Peg-Board, Shadowvent Siding, Panelgroove, Ridgegroove, Concrete Form Presdwood, Benelex, Primecote products, Seadrift, Misty Walnut, Panelok Wall System.

MASONITE CORP.

Home Address: Chicago, Ill.
Plant Address: Laurel, Miss.
Personnel; John M. Coates, Pres.; William A. Cotton, Vice-Pres. in chg. of Mfg.; Paul B. Shoemaker, Vice-Pres. Sls.; F. O. Marion, Gen. Sls. Mgr.; Donald J. Gray, Vice-Pres., Gen. Mgr., Laurel; Orcutt W. Frost, Dir. of Research and Development; Frank Lesniak, Chief Engineer.
Production: (Rated Annual Capacity) 910,000,000 sq. ft. 1/8 inch basis.
Process: exploded wood fiber process, wet and semi-dry type.
Panel Sizes: up to 4x16 feet.
Thicknesses: 1/10 to 2 inches.
Spec. Gravity: 0.9—1.4.
Colors: brown.
Characteristics: smooth, dense, wear-resistant surface.
Raw Material Used: hardwood and softwood.
Uses: many in building and industry; walls, ceilings, cabinets, underlayment, siding, decorative specialties, bathroom and kitchen "tiles," concrete forms, etc.
Specialty Items: striating, groove, tempering, embossed patterns, grooving, priming, printing.
Trade Names: Masonite Presdwood, Tempered Presdwood, Panelwood, Underlayment, Tempered Duolux, Dorlux, Tempertile, Leatherwood, Ridgeline, Peg-Board, Shadowvent Siding, Pan-

elgroove, Ridgegroove, Concrete Form Presdwood, Benelex, Primecote products, Seadrift, Misty Walnut, Panelok Wall System.

NU-PLY CORP.

Midway Drive, Bemidji, Minn.
Personnel: F. Russell Eggers, Pres. & Mgr.; Archie Gulsvig, Supt.; Don Gould, Tech. Dir.; Don Hanson, Plant Engr.
Production: (Rated Annual Capacity) 36,000,000 sq. ft. ⅜ inch basis.
1958 Production: 28,000,000 sq. ft.
Rated Capacity (Tons): 44 daily.
Process: Dry.
Panel Sizes: 49x97½ inches and smaller.
Thicknesses: 1/10; ⅛; 3/16; ¼; 5/16; ⅜ inches.
Spec. Gravity: 1.02—1.20.
Colors: light.
Characteristics: smooth both sides.
Percent into Cut-Up Sizes: 40%.
Raw Material Used: aspen.
Volume (from logs) 1400 tons.
Uses: furniture; toys; underlayment; walls, laminating; games; doors; displays.
Specialty Items: sanding.
Trade Names: Bemidji-Bord; Door-Life.
Percent of Product for Own Use: None.

OREGON LUMBER CO.

Home Address: Chicago, Ill.
Plant Address: Dee, Ore.
Personnel: C. M. Hines, Pres.; W. J. Runckel, Mgr.; E. N. Jolly, Supt.; D. W. Marti, Sls. Mgr.; H. Ely, Tech. Dir. and Asst. Mgr.
Production: (Rated Annual Capacity) 70,000,000 sq. ft. ⅛ inch basis.
1958 Production: 50,000,000 sq. ft.
Rated Capacity (Tons): 85 daily.
Process: Wet, continuous.
Panel Sizes: 4x16 feet.
Thicknesses: 1/12; 1/10; ⅛; 3/16; ¼ inches.
Spec. Gravity: .92—1.04.
Colors: light tan.
Percent into Cut-Up Sizes: 5%.
Raw Material Used: sawmill chips
Volume (from mill residues): 150,000 tons annually.
Uses: home construction, furniture, electronics, automotive.
Specialty Items: striating, etching, overlayment, tempering, prefinish.
Trade Names: Allwood; Prestpanel, Weavebord, Heatherbord, Shadobord.
Percent of Product for Own Use: 10%.
Sales Agents: Simpson Logging Co.

PRAIRIE FIBREBOARD LTD.

42nd St. and Warman Road,
Saskatoon, Sask., Canada.
Personnel: R. Hauer, Pres.; Robert W. Hauptli, Vice Pres. and Gen. Mgr.; W. H. Boulding, Sec.-Treas.; V. Hanson, Mill Supt.
1958 Production: 12,000,000 sq. ft. tempered hardboard.

RIVERSIDE MANUFACTURING CO., INC.

Conway, N. C.
Edwin P. Brown, Pres.
Under construction.

SUPERWOOD CORP.

Duluth, Minn.
Personnel: M. J. Opsahl, Pres.; Geo. Joudal, Mgr.; L. Egerstrand, Supt.; K. V. Hafner, Sls. Mgr.; Geo. C. Fewson, Tech. Dir.; Einer Nelson, Plant Engr.
Production: (Rated Annual Capacity) 150,000,000 sq. ft. ⅛ inch basis.
1958 Production: 128,000,000 sq. ft.
Rated Capacity (Tons): 140 daily.
Process: Fourdrinier and Chapman wet processes.
Panel Sizes: 4x8 and 4x16 feet.
Thicknesses: 1/12; 1/10; ⅛; 3/16; ¼; 5/16 inches.
Spec. Gravity: 1.02.
Colors: light.
Percent into Cut-Up Sizes: 30%.
Raw Material Used: Aspen.
Volume (from logs) 52,000 tons.
Uses: furniture and cabinet manufacturers; toys; automotive.
Specialty Items: overlayment; tongue & groove; tempering; prefinish.
Trade Names: Superwood.
Percent of Product for Own Use: None.

THE TEMPRON CORP.

Home Address: (Temporary) 2710 So. Parkway, Chicago 16, Ill.
Plant Address: P.O. Box 44, El Paso, Tex. (to be completed mid-1960.)
Personnel: Dr. J. F. T. Berliner, Pres.; The Tayler Corp., Mgr.; H. K. Linzell of Tayler Corp., Supt.; J. G. Stemples, Sls. Mgr.; J. B. Graves, Vice Pres. & Sec.
Production: (Rated Annual Capacity) 100,000,000 sq. ft. ⅛ inch basis.
Rated Capacity (Tons): 100 daily.
Process: Wet-dry process.
Thicknesses: 1/10 to ⅜ inches.
Spec. Gravity: 66 pound/cu. ft. (approx.).
Characteristics: tempered, smooth two sides.
Raw Material Used: Creosote Bush.
Trade Names: Tempron.

U. S. GYPSUM CO.

Home Address: Chicago, Ill.
Plant Address: Pilot Rock, Ore.
Personnel: O. M. Knode, Pres.; S. E. Martin, Mgr.; A. L. Rabb, Supt.; R. D. Stephan, Vice Pres. Sls.; R. Marck, Tech. Dir.; M. Slauich, Plant Engr. (See Insulation Board listing for more details.)

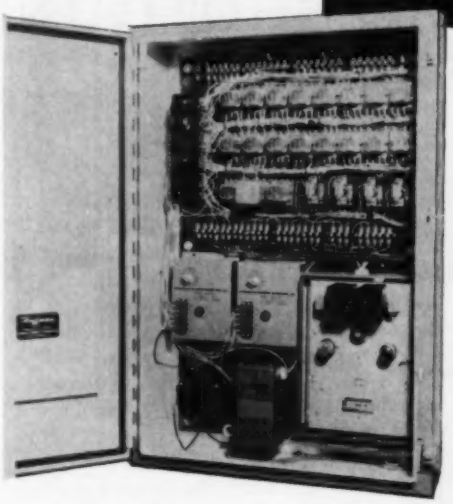
WEYERHAEUSER TIMBER CO.

Silvatek Products Div.
Home Address: Tacoma, Wash.
Plant Address: Klamath Falls, Ore.
Personnel: F. K. Weyerhaeuser, Pres.; J. L. Aram, Mgr.; N. J. Briggs, Supt.; D. C. Greeley, Sls. Mgr.; A. M. Fisken, Mgr. of Mfg.; Dale Alter, Plant Engr.
Production: (Rated Annual Capacity) 80,000,000 sq. ft. ⅛ inch basis.
Process: Semi-dry process, Weyerhaeuser developed.
Panel Sizes: 4x16 feet.
Thicknesses: 1/12; 1/10; ⅛; 3/16; ¼; 5/16 inches.
Colors: tan and brown.
Uses: building and industry—walls, ceilings, underlayment, cabinet work.
Specialty Items: tempering; perforating.
Trade Names: Weytex, Weylite, Weyfair, Weybase.
Percent of Product for Own Use: None.
Sales Agents: Silvatek Products Div.

(Continued on next page)

the ORIGINAL two-motor Carriage Setworks Drive Unit

Prineville Electro-Set*



Pictured — to the left, PRINEVILLE ELECTROSET wall-mounted control panel*

At Missoula White Pine Sash Co., Missoula, Mont., Supt. "Red" Ledeau says, "We buy lumber from many mills with sawyer controlled setworks. The lumber we get from our own mill with PRINEVILLE ELECTROSET* is the most accurately sawn and stays 100% within our tolerances." Engineer "Andy" Anderson says, "Downtime is almost unheard of with PRINEVILLE ELECTROSET* . . . there is no maintenance problem . . . "

** Patented under U. S. Patent No. 2739626*

Prineville MACHINE & SUPPLY COMPANY

Phone—HI 7-6225 PRINEVILLE, OREGON P. O. Box 85

WISCONSIN WOOD PRODUCTS, INC.
Phillips, Wis.
Personnel: Harry Gustafson, Pres.; Ray Wicks, Supt.; E. A. Leonard, Sls. Mgr.
Production: (Rated Annual Capacity) 40,000,000 sq. ft. ⅛ inch basis.
Rated Capacity (Tons): 50 daily.
Process: Dry.
Panel Sizes: 4x8 feet.
Thicknesses: 1/10 to ¼ inches.
Raw Material Used: hardwood.

INSULATION BOARD

ABITIBI CORP.
Home Address: Penobscot Bldg., Detroit, Mich.
Plant Address: Alpena, Mich.
(Complete information on hardboard listing.)
Personnel: D. W. Ambridge, Pres.; P. E. Roberts, Exec. Vice-Pres.; O. B. Eustis, Mill Mgr.; E. J. Schultz, Sls. Mgr.; R. E. Paul, Control Supt.; W. C. E. Wood, Plant Engr.
Trade Names: Abitibi Insulation Board.

ARMSTRONG CORK CO.
Home Address: Lancaster, Pa.
Plant Address: Pensacola, Fla.

ARMSTRONG CORK CO.
Home Address: Lancaster, Pa.
Plant Address: Macon, Ga.
Personnel: Clifford J. Backstrand, Pres.; E. A. Worm, Jr., Plant Mgr.; J. O. Sampson, Mgr. Lumber Dealer Sls.
Production: (Rated Annual Capacity) 570,000,000 sq. ft. ⅛ inch basis.
1958 Production: 85% capacity.
Process: Wet forming of wood pulp.
Specialty Items: tongue & groove; prefinish.
Trade Names: Cushiontone — acoustical ceiling tile; Temlok—sheathing, decorator tile, interior plank.

BARRETT DIV., ALLIED CHEMICAL CORP.
Home Address: New York, N. Y.
Plant Address: Dubuque, Iowa.
Personnel: H. Dorn Stewart, Pres.; William Herbert, Mgr.; W. S. Benschneider, Supt.; Jay F. Simpson, Sls. Mgr.; Dr. J. N. Cosby, Tech. Dir.; R. E. Oldendorph, Plant Engr.
Production: (Rated Annual Capacity) 75,000,000 sq. ft. ½ inch basis.
Process: Semi-chemicals; Pandia Digestors.
Panel Sizes: 13x25 feet.
Thicknesses: 5/16; ⅜; ½; 25/32 inches.
Percent into Cut-Up Sizes: 100%.
Raw material used: pulpwood, flax straw.
Volume (from logs): 15,000 tons.
Uses: exterior sheathing, ceiling tile, interior finish, roof insulation.
Specialty Items: tongue & groove; prefinish; asphalt coatings.
Trade Names: Barrett; Rigidwall; Barretone.
Percent of Product for Own Use: None.

BARRETT DIV., ALLIED CHEMICAL CORP.
Home Address: New York, N. Y.
Plant Address: Sunbury, Pa.
Personnel: H. Dorn Stewart, Pres.; William Herbert, Mgr.; J. F. Campbell, Supt.; Jay F. Simpson, Sls. Mgr.; Dr. J. N. Cosby, Tech. Dir.; J. I. Geary, Plant Engr.
Production: (Rated Annual Capacity) 100,000,000 sq. ft. ½ inch basis.
Process: Semi-chemicals; Pandia Digestors
Panel Sizes: 13x25 feet.
Thicknesses: 5/16; ⅜; ½; 25/32 inches.
Percent into Cut-Up Sizes: 100%.
Raw Material Used: Pulpwood.
Volume (from logs): 40,000 tons.
Uses: exterior sheathing, ceiling tile, interior finish, roof insulation.
Specialty Items: tongue & groove; prefinish; asphalt coatings.
Trade Names: Barrett; Rigidwall; Barretone.

THE CELOTEX CORP.
Home Address: 120 S. LaSalle St., Chicago 10, Ill.
Plant Address: L'Anse, Michigan.
To be completed the latter part of 1959.
Personnel: Henry W. Collins, Pres.; F. J. Alfeis, Works Mgr.

THE FLINTKOTE CO.,
Canec Div.
Home Address: 30 Rockefeller Plaza, New York City 20, N. Y.
Plant Address: Hilo, Hawaii.
Personnel: George S. Pecaro, Pres.; Kenneth A. McLarty, Mgr.; Barney J. Travis, Supt.; Fred Haney, Tech. Dir.
Production: (Rated Annual Capacity) 54,500,000 sq. ft. ½ inch basis.
1958 Production: 54,500,000 sq. ft.
Rated Capacity (Tons): 110 daily.
Thicknesses: ¼ to 3 inches.
Spec. Gravity: 12—20-pound cu. ft.
Colors; natural, white, special.
Raw Material Used: Bagasse.
Uses: insulation, structural, decorative, acoustical.
Specialty Items: tongue & groove.
Trade Names: Canec.

THE FLINTKOTE CO.
Home Address: 30 Rockefeller Plaza, New York City 20, N. Y.
Plant Address: Meridian, Miss.
Personnel: George J. Pecaro, Pres.; Glenn Ball, Mgr.; H. M. Whittemore, Sls. Mgr.; R. H. Cubberley, Tech. Dir.
Production: (Rated Annual Capacity) 210,000,000 sq. ft. ½ inch basis.
1958 Production: 161,000,000 sq. ft.
Rated Capacity (Tons): 200 daily.
Process: groundwood; defibrator; Fourdrinier.
Panel Sizes: 12x12 inch to 4x12 feet.
Thicknesses: ⅜ to 3 inches.
Colors: natural, white, printed designs.
Raw Material Used: Pulpwood.
Percent of Product for Own Use: 15%.

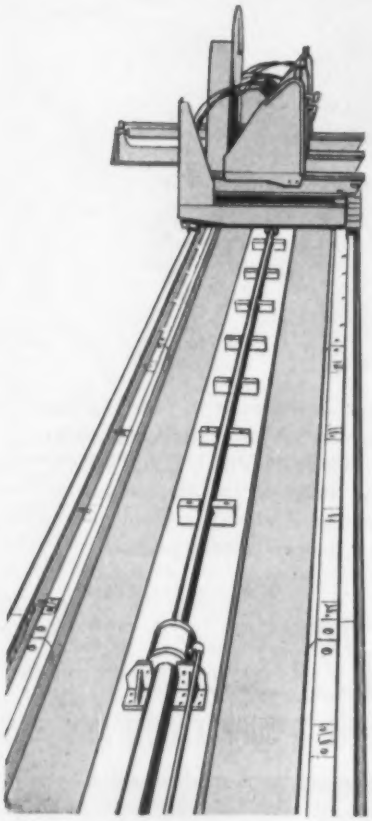
HOMASOTE CO.
Home Address: P.O. Box 441, Trenton, N. J.

JOHNS-MANVILLE
Home Address: 22 East 40th St., New York 16, N. Y.
Plant Address: Klamath Falls, Ore.

Increase sawmill production

Reduce operating and maintenance costs

Berry
HYDRAULIC SHOTGUN
Carriage Drive



This modern drive, using a powerful hydraulic piston to move the carriage, is far more efficient than steam. Available for all carriage weights and speeds, it increases production and reduces operating and maintenance costs. Berry drives can be installed with individual power units or for operation on "lazy horsepower" off the head rig power source. The complete unit, Shotgun Drive and Pump Package, are engineered to your requirements by hydraulic specialists. Ask for a free survey of your mill and report on estimated savings with the Berry Hydraulic Shotgun Carriage Drive.

Berry Hydraulics
A division of
Oliver Tyrone Corporation

General sales office: Oliver Building, Pittsburgh 22, Pa. — Southern sales office and plant: Corinth 1, Miss.

JOHNS-MANVILLE
Home Address: 22 East 40th St., New York 16, N. Y.
Plant Address: Natchez, Miss.

JOHNS-MANVILLE
Home Address: 22 East 40th St., New York 16, N. Y.
Plant Address: Jarret, Va.

KAISER GYPSUM CO.
Insulating Board Div.
Plant Address: St. Helens, Ore.
Personnel: E. H. Schaper, Operations Mgr.

MacANDREWS & FORBES CO.
Third St. & Jefferson Ave., Camden 4, N. J.
Personnel: R. M. Bickerstaff, Jr., Pres.; W. L. Bartholomew, Mgr.; R. Shaffer, Supt.; C. K. Swift, Tech. Dir.; W. Watkins, Plant Engr.
Production: (Rated Annual Capacity) 40,000,000 sq. ft. ½ inch basis.
1958 Production: 27,030,851 sq. ft.
Rated Capacity (Tons): 50 daily.
Panel Sizes: 4 and 2-foot widths.
Thicknesses: ⅜; ½; 25/32 inches.
Colors: natural & black.
Characteristics: Extra strong board.
Percent into Cut-Up Sizes: 13%.
Raw Material—Volume (from mill residues): 5332 tons annually; (from logs): 1630 tons.
Uses: sheathing; roof; shingle undercourse.
Specialty Items: tongue & groove; asphalt impregnated.
Trade Names: Lockaire; Asphalic.
Sales Agents: Plastergon Wall Board Co.

MINNESOTA & ONTARIO PAPER CO.
Insulite Div.
Home Address: 500 Investors Building, Minneapolis 2, Minn.
Plant Address: International Falls, Minn.
Personnel: Robert Faegre, Pres.; W. H. Schlafge, Gen. Mgr., Int'l. Falls.; L. J. Kucera, Supt. Intl. Falls; M. C. Fairfield, Sls. Mgr., Mpls.; A. S. Bull, Tech. Dir., Mpls.; Warren Peterson, Plant Engr.
1958 Production: 168,000 tons.
Process: Groundwood pulping process; double cylinder formation.
Panel Sizes: Widths to 12 feet; lengths to 16 feet.
Thicknesses: ¼ to 1 inch.
Spec. Gravity: 0.20 to 0.50.
Colors: natural groundwood.
Percent Into Cut Up Sizes: 100%.
Raw Material Used: groundwood.
Uses: sheathing, siding, roof decking, industrial.
Specialty Items: partial primed; tongue & groove.
Trade Names: Insulite.
Percent of Product for Own Use: none.

NATIONAL GYPSUM CO.
Home Address: 325 Delaware Ave., Buffalo, N. Y.
Plant Address: P. O. Box 1528, Mobile, Ala.
Personnel: F. A. Manske, Pres.; George Cook, Mgr.; P. E. Welch and W. H. Bechtel, Supts.; John Brown, Vice Pres. Sls.; D. D. Crandall, Tech. Dir.; W. A. Hardcastle, Plant Engr.
Process: Groundwood (pine); semi-chemicals (hardwoods).
Panel Sizes: 4x10 foot maximum.
Thicknesses: ⅜, ½, ¾ inches.
Percent Into Cut Up Sizes: 50%.
Raw Material Used: Pine, hardwood.
Volume from Logs: 40,000 tons.
Uses: Insulation & acoustical.
Specialty Items: Tongue & groove; prefinish.
Trade Names: Gold Bond.
Percent of Product for Own Use: None.

PRAIRIE FIBREBOARD LTD.
Address: 42nd Street & Warman Road, Saskatoon, Sask.
Personnel: R. Hauer, Pres.; Robert W. Hauptli, Vice Pres. & Gen. Mgr.; W. H. Boulding, Secr. Treas.; V. Hanson, Mill Supt.
Production: (Rated Annual Capacity): 20,000,000 sq. ft. insulating board; 12,000,000 sq. ft. tempered hardboard.

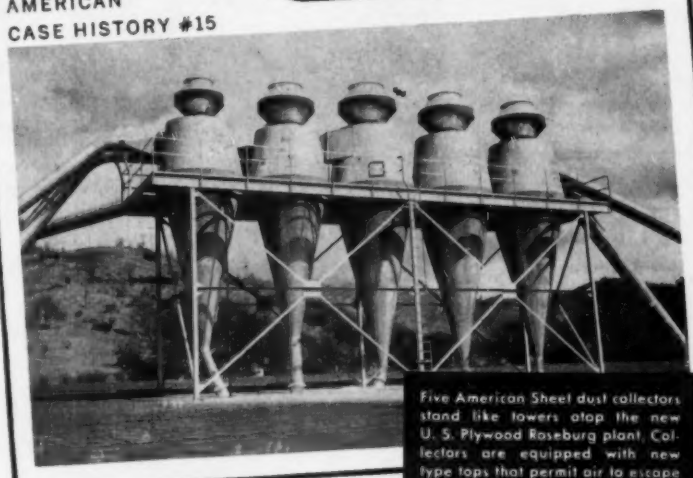
SIMPSON LOGGING CO.
Home Address: 3rd & Franklin, Shelton, Wash.
Plant Address: Waterfront, Shelton, Wash.
Personnel: H. W. McClary, Vice Pres. & Gen. Mgr.; Harvey H. Warnaca, Product Mgr.; Woodrow Johnson, Supt.; J. L. Wetherby, Sls. Mgr.; Paul D. Close, Tech. Dir.; Oliver Ashford, Resident Engr.
Production (Rated Annual Capacity): 97,000,000 sq. ft. ⅜ inch basis.
1958 Production: 97,000,000 sq. ft.
Rated Capacity (Tons): 120 daily.
Process: Fordrinier-Bauer pulped.
Panel Sizes: 12x12 inch through 96x192 inch.
Thicknesses: 5/16 through 3 inches.
Spec. Gravity: .306.
Colors: White and natural.
Percent Into Cut Up Sizes: 100% standard stock item.
Raw Material Used: Fir and hemlock chips.
Volume: (from mill residues); 41,400 tons annually.
Uses: Structural, insulating, decorative and acoustical.
Specialty Items: Striating, etching, overlayment, tongue & groove, prefinish. Have incorporated plywood and insulation board.
Trade Names: Simpson Insulating Board Products; Forestone.
Percent of Product for Own Use: None.

SOUTHERN PINE LUMBER CO.
Diboll, Tex.
Personnel: Arthur Temple, Jr., Pres.; Carrol Allen, Mgr.; C. H. Shepherd, Jr., Supt.; Latane Temple, Sls. Mgr.; B. E. Mikulka, Tech. Dir.; Fred Dangeleisen, Sls. Coordinator.
Production: (Rated Annual Capacity) 100,000,000 sq. ft. ½ inch basis.
1958 Production: 20,000,000 sq. ft.
Rated Capacity (Tons): 130 daily.
Process: Templebord.
Panel Sizes: 148x294 inches
Thicknesses: ⅜; ½; 25/32; 1; 1½; 2 inches.
Percent Into Cut Up Sizes: 100%
Raw Material Used: Pine & oak chips.
Volume (from mill residues): 34,000 tons annually.
Uses: Sheathing, walls, ceilings.
Specialty Items: Tongue & groove; prefinish; asphalt coating.
Trade Names: Certainteed; Templebord.
Sales Agents: Certain-Teed Products Co.

THE TEMPRON CORP.
Home Address: (Temporary) 2710 So. Parkway, Chicago 16, Ill.
Plant Address: P. O. Box 44, El Paso, Tex. (To be completed mid-1960).
Personnel: Complete details on this plant in the hardboard listing.

(Continued on next page)

AMERICAN
CASE HISTORY #15



Five American Sheet dust collectors stand like towers atop the new U. S. Plywood Roseburg plant. Collectors are equipped with new type tops that permit air to escape vertically and keep moisture out.

U.S. Plywood selects American dust collecting systems

Two American blower systems handle the waste from two sanding systems. Waste is delivered to American surge hoppers where it is metered to a Rader high-pressure conveying system, which carries the waste 1400 feet to another American surge hopper adjacent to the boiler house.

Three American blower systems, which serve the cut-up and hog departments, plus the patch department and belt sanders, deliver the waste to American surge hoppers where the waste is metered into a Rader high-pressure relay system. This delivers the material to the fuel storage house.

Should your plans include sheet metal work of any type, consult American. You'll be glad you did.

SOME OTHER PLYWOOD PLANT INSTALLATIONS BY AMERICAN SHEET METAL WORKS

WEYERHAEUSER LUMBER COMPANY.....COTTAGE GROVE, OREGON
DRAIN PLYWOOD COMPANY.....DRAIN, OREGON
DWYER LUMBER COMPANY.....PORTLAND, OREGON
DIAMOND LUMBER COMPANY.....TILLAMOOK, OREGON

AMERICAN
MEANS
EFFICIENCY

AMERICAN
SHEET METAL WORKS, Inc.
Manufacturers of Blowers
920 NE Glisan Portland, Oregon BE 2-0111

U. S. GYPSUM CO.
Home Address: Chicago, Ill.
Plant Address: Pilot Rock, Ore.
Personnel: O. M. Knode, Pres.; S. E. Martin, Mgr.; A. L. Rabb, Supt.; R. D. Stephan, Vice Pres. Sls.; R. Marck, Tech. Dir.; M. Slauich, Plant Engr.
Production: (Rated Annual Capacity) 120,000,000 sq. ft. ⅛ & ½ inch basis.
Specialty items: Tempering; prefinish.
Trade Names: Duron.

WOOD CONVERSION CO.
Cloquet, Minn.

PARTICLE BOARD

ABITIBI POWER & PAPER CO., LTD.
Home Address: 408 University Avenue, Toronto, Canada.
Plant Address: Sturgeon Falls, Ontario, Canada.
Personnel: D. W. Ambridge, Pres.; R. E. Costello, Gen. Mgr., Panelboard Div.; A. L. Farnsworth, Mill. Mgr.; E. C. Hale, Supt.; A. W. Gray, Sls. Mgr.; E. A. McLean, Control Supt.; P. M. Rebin, Plant Engr.
Production: (Rated Annual Capacity) 17,556,000 sq. ft. ⅜ inch basis. Flakeboard.
Process: Abitibi multiplaten.
Panel Sizes: 4x8 feet.
Thicknesses: ¼ to 1⅛ inches.
Spec. Gravity: 0.60.
Percent Into Cut Up Sizes: 20%.
Raw Material Used: Woodpulp.
Uses: Core stock, decorative panels, construction.
Trade Names: Platewood.
Percent of Product for Own Use: None.

AMERICAN FURNITURE CO.
Starling Avenue, Martinsville, Va.
Personnel: Morgan Simmons, Pres.; R. L. Whitener, Mgr.; W. E. Morgan, Supt.; T. N. Barbour, Sls. Mgr.; Jimmy L. Minter, Tech. Dir. and Plant Engr.
Production: (Rated Annual Capacity) 5,000,000 sq. ft. ¾ inch basis. Flakeboard.
1958 Production: 2,500,000 sq. ft.
Rated Capacity (Tons): 30 daily.
Process: Lanewood Extruder.
Thicknesses: 9/16; 11/16; 13/16; 17/16; 19/16; 21/16 inches.
Spec. Gravity: .65.
Percent Into Cut Up Sizes: 100%.
Raw Material Used: Waste from furniture plant.
Volume (from mill residues) 6,200 tons annually.
Uses: Core stock for furniture; plywood panels.
Percent of Product for Own Use: 70%.

AMERICAN FURNITURE CO.
North Wilkesboro, N. C.

AMERICAN PARBOARD CORP.
Black Mountain, N. C.
Personnel: H. R. Tipton, Pres.; David B. Morgan, Jr Manager; Jack Brown, Supt.; Chet Sobol, Sls. Mgr.; A. Haigh, Tech. Dir.; N. Hamilton, Plant Engr.
Production: (Rated Annual Capacity) 10,000,000 sq. ft. ¾ inch basis. Flakeboard.
Rated Capacity (Tons): 43 daily.
Process: Miller-Hofft.
Panel Sizes: 5x8 feet.
Thicknesses: ⅜ to 1¼ incnes.
Percent Into Cut Up Sizes: 50%.
Raw Material Used: Appalachian hardwood.
Trade Name: Parflake.
Percent of Product for Own Use: 5%.
Sales Agents: C. B. Stem.

BERKLINE CORP.
Home Address: Springfield, Mass.
Plant Address: Morristown, Tenn.
Personnel: Lester Popkin, Vice Pres.; H. Westhaver, Mgr.; C. Rice, Supt.; M. Margolin, Sls. Mgr.; F. Magill, Plant Engr.
Production: (Rated Annual Capacity) 1,100,000 sq. ft. ½ inch basis.
1958 Production: 927,000 sq. ft.
Process: Chipcraft horizontal extrusion.
Panel Sizes: 45 inches wide.
Thickness: ½ inch.
Spec. Gravity: .40 to .80.
Color: Natural.
Percent Into Cut Up Sizes: 100%.
Raw Material Used: Scrap hardwood.
Uses: 72% own products; frame parts; 28% to cedar chest mfg.
Specialty Items: Striating.

BROWNSVILLE PARTICLE BOARD AND ASSOCIATED PRODUCTS, INC.
Brownsville, Ore.
Personnel: Joseph E. Clark, Pres. & Mgr.; Claude Taylor and Dick Davis, Foremen.
Production: (Rated Annual Capacity) 1,300,000 sq. ft. ¾ inch basis.
1958 Production: 1,000,000 sq. ft.
Rated Capacity (Tons): 72 day basis.
Process: Dry multi platen.
Panel Sizes: 48x96 inches.
Thicknesses: ¼ through 1¼ inches.
Spec. Gravity: .067.
Color: Natural.
Characteristics: Single aggregate particle board.
Percent Into Cut Up Sizes: None.
Raw Material Used: Planer shavings.
Uses: Underlayment—furniture core—cabinet.
Trade Names: Neopar. CFI 341; CFI 441.
Percent of Product for Own Use: None.
Sales Agents: C F I Boards Inc.; Timber Products Co. of Oregon, Brownsville, Ore.

CAROLINA FOREST PRODUCTS, INC.
Box 1251, Wilmington, N. C.
Personnel: John Colucci, Jr., Pres.; George E. Kidder, Mgr.; Donald McCallum, Supt.; Donald Fisher, Tech. Dir.
Production: (Rated Annual Capacity) 10,000,000 sq. ft. ¾ inch basis.
1958 Production: 5,000,000 sq. ft.
Process: Miller-Hofft.
Panel Sizes: 60x96 inches.
Thicknesses: 5/16 to 1¼ inches.
Characteristics: Shav-Bond made from specially prepared pine shavings.
Percent Into Cut Up Sizes: 50%.
Raw Material Used: Pine.
Uses: Flake Bond used as core stock; paneling plastic underlayment, etc. Shav-Bond used mostly for tile underlayment.
Trade Names: Flake Bond; Shav-Bond.
Sales Agents: Carolina Pacific Sales, Wilmington, N. C.

For Entire Plant

For Office

For Warehouse

Specify Low Cost, Easy-to-Buy, Easy-to-Build

ARMCO STEEL BUILDINGS

New steels are born at Armco

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ARMCO DRAINAGE & METAL PRODUCTS, INC.
2180 Milvia St., Berkeley 4, California
P. O. Box 751 Federal Station, Portland 7, Oregon

CAVALIER CORP.

343 West First St., Chattanooga 2, Tenn.
Personnel: J. H. Lane, Pres.; M. W. Moore, Mgr.; L. Picket, Plant Engr.
Production: (Rated Annual Capacity) 6,000,000 sq. ft. ¾ inch basis.
1958 Production: 2,300,000 sq. ft.
Rated Capacity (Tons): 9000 daily.
Process: Miller-Hofft, multi-platen.
Panel Sizes: Trim 4x8 feet.
Thicknesses: ½ to ⅞ inches.
Spec. Gravity: .75.
Colors: Light wood.
Percent Into Cut Up Sizes: 40%.
Raw Material Used: Mill ends.
Uses: Furniture core stock; underlayments.
Specialty Items: Overlayment, Tongue & Groove.
Trade Name: Lignabond.
Percent of Product for own Use: 40%.

CHAPWOOD, INC.

Philomath, Ore.
Personnel: Michael Bevandich, Pres. & Gen. Mgr.; Oliver Widness, Supt.; Dan Reynolds, Sls. Mgr.
Production: (Rated Annual Capacity) 7,500,000 sq. ft. ⅜ inch basis.
1958 Production: 5,000,000 sq. ft.
Rated Capacity (Tons): Appr. 25 daily.
Process: Chapman process.
Panel Sizes: 4x8 feet.
Spec. Gravity: 0.7.
Colors: Natural.
Characteristics: Medium density.
Raw Material Used: Planer shavings.
Volume (from mill residues): 6,500 tons annually.
Uses: Underlayment, sheathing.
Specialty Items: Fibre overlayment.
Trade Name: Chapwood.
Sales Agents: Timberlane Lumber Co.

CHIPBOARD PRODUCTS, INC.

123 N. E. McLearn Road, P. O. Box 7, Grants Pass, Ore.
Personnel: R. T. Moore, Jr., Pres.; C. M. Starnes, Mgr.
Production: (Rated Annual Capacity) 6,000,000 sq. ft. ¾ inch basis. Flakeboard.
Rated Capacity (Tons): 30 daily.
Process: Kreibaum extrusion.
Thicknesses: ½ through 1½ inches.
Spec. Gravity: 40 pound cu. ft.
Percent Into Cut Up Sizes: 99%.
Raw Material Used: Douglas fir shavings.
Uses: Furniture and door core.
Percent of Product for Own Use: None.

CLEAR FIR PRODUCTS CO. OF OREGON, LTD.

Home Address: P. O. Box 188, Springfield, Ore.
Plant Address: 1116 South "A" St., Springfield, Ore.
Personnel: W. H. Gonyea, Pres.; Frank S. Clarke, Mgr.; J. R. Nell, Supt.; James E. Berwick, Sls. Mgr.; George Mohr, Tech. Dir.
Production: (Rated Annual Capacity) 5,000,000 sq. ft. ¼ inch basis.
1958 Production: 4,300,000 sq. ft.
Process: Dry.
Panel Sizes: 4x8 feet.
Uses: Underlayment; paneling.
Trade Names: Cleartex, Classic.
Sales Agents: Clear Fir Sales Co., P. O. Box 188, Springfield, Ore.

COLUMBIA HARDBORD CO., INC.

Home Address: Seattle, Washington.
Plant Address: Everett, Wash.
Personnel: F. L. Johnson, Pres.; Dale L. Schubert, Mgr.; Marion Andrew, Supt.; Don L. Johnson, Sls. Mgr.; Wyman Williams, Tech. Dir.
Production: (Rated Annual Capacity) 18,000,000 sq. ft. ½ inch basis. Flakeboard.
1958 Production: 18,000,000 sq. ft.
Rated Capacity (Tons): 80 daily.
Process: Industrial Development Co., Inc.
Panel Sizes: 4x8 and 4x10 feet.
Thicknesses: ¼ to ¾ inches.
Spec. Gravity: .65.
Raw Material Used: Alder and cedar.
Uses: Wherever interior plywood is used.
Specialty Items: Striating; overlayment; prefinish, flooring.
Trade Name: Cedawood.
Percent of Product for Own Use: 25%.

DIXIE CHIPBOARD CO.

Home Address: 427 W. Randolph St., Chicago, 6, Ill.
Plant Address: Rural Hall, N. C.
Personnel: T. J. Connelly, Pres.; J. Grady Goldston, Jr., Mgr.
Production: (Rated Annual Capacity) 5,000,000 sq. ft. ¾ inch basis.
1958 Production: 4,000,000 sq. ft.
Rated Capacity (Tons): 25 daily.
Process: Kreibaum vertical extrusion.
Panel Sizes: Cut-to-size.
Thicknesses: ½ to 2 inches.
Spec. Gravity: 40-42 pound cu. ft.
Characteristics: Warp free.
Percent Into Cut Up Sizes: 100%.
Raw Material Used: Softwoods.
Uses: Furniture, desk and door cores.
Percent of Product for Own Use: None.

FORMICA CORP.

Sub. of American Cyanamid Co.
Home Address: 4614 Spring Grove Ave., Cincinnati, Ohio.
Plant Address: Farmville, N. C.
Personnel: D. J. O'Conor, Jr., Pres.: W. F. Drees, Mgr.; T. J. Canning, Supt.; J. D. Cochrane, Jr., Tech. Dir.
Production: (Rated Annual Capacity) 40,000,000 sq. ft. ¾ inch basis.
Panel Sizes: Up to 6x12 feet.
Thicknesses: ¾ to 1¾ inches.
Spec. Gravity: 35 to 60 pound per cu. ft. density.

GRANITE BOARD, INC.

National Starch Prods., Inc.
Home Address: 750 Third Ave., New York, N. Y.
Plant Address: Goffstown, N. H.
Personnel: H. A. Hermsdorf, Pres.; A. G. Battaglia, Mgr.; Paul Brusquini, Plant Engr.; W. K. Grubman, Plant Mgr.
Production: (Rated Annual Capacity) 15,000,000 sq. ft. ¾ inch basis.
1958 Production: 10,000,000 sq. ft.
Process: Flat platen.
Panel Sizes: 48x96 inches.
Thicknesses: ⅜ to 1⅛ Inches.
Spec. Gravity: 0.65.
Percent Into Cut Up Sizes: 50%.
Raw Material Used: Eastern White Pine.
Uses: Core stock; floor underlayment.
Trade Name: Granite Board.
Percent of Product for Own Use: None.

(Continued on next page)

NOW *Sized to Fit the Job*

...LAMB 12-INCH VENEER AND PLYWOOD HOG

- LOW INSTALLATION COST
- LOW MAINTENANCE COST
- FLEXIBLE INSTALLATION
- BALANCED, VERY QUIET

NOW Install the LAMB Hog adjacent to the original source of material to be cut and gain more floor space and less lost motion in stock handling. The LAMB Veneer and Plywood Hogs are ruggedly constructed along advanced principles of cutting and production design. They are compact, rugged, and are built to the rigid requirements of QUALITY demanded of products bearing the LAMB name.

LAMB

LAMB Hogs are also available in sizes — 18", 24", 30", 36", 42" and 48".
Phone or Write **us about your hog problem. We'll be glad to advise you. No obligation, of course.**

LAMB-GRAYS HARBOR CO., Inc.
HOQUIAM, WASHINGTON, U. S. A. • PHONE: GENERAL 8-1000

GRAY PRODUCTS CO., INC.
Waverly, Va.
Personnel: Elmon T. Gray, Pres.; Charles E. Crawford, Mgr.; Joseph W. Coufal, Sls. Mgr.; William M. Newman, Tech. Dir.
Production: (Rated Annual Capacity) 25,000,000 sq. ft. ¾ inch basis.
1958 Production: 12,000,000 sq. ft.
Process: Miller Hofft multiple platen.
Panel Sizes: 5x8; 5x10. 4x8, 4x10 feet.
Thicknesses: ⅝; ½; ¾; ⅞; 1; 1⅛; 1-3/16 inches.
Percent Into Cut Up Sizes: 8%.
Raw Material Used: Loblolly pine pulpwood; planer mill shavings.
Trade Names: Graco Flakecore & Graco Particle Board.
Percent of Product for Own Use: None.

HART WOOD PRODUCTS, INC.
Box 27, Hart, Mich.
Personnel: W. Lionel Tate, Pres. & Mgr.; T. Alden Wiedman, Supt. & Plant Engr.; Lorne Farley, Sls. Mgr.
Production: (Rated Annual Capacity) 3,000,000 sq. ft. ¾ inch basis.
1958 Production: 1,500,000 sq. ft.
Rated Capacity (Tons): 8 daily.
Process: Vertical extruded Hart particle board.
Panel Sizes: 4x4 through 4x12 feet.
Thicknesses: ½—.560; ⅝—.700; ¾—1; 1⅛—2 inches.
Spec. Gravity: 72.
Color: Brown.
Raw Material Used: 75% aspen; 25% maple, birch, cherry, etc.
Volume (from mill residues) 400 tons annually. (from logs) 2000 tons.
Uses: Core for veneered panels, cupboard door, closet doors, furniture panels.
Specialty Items: Prefinish.
Trade Names: The Hart Line; Hart Board.
Percent of Product for Own Use: 95%

INTERNATIONAL PAPER CO.
Long-Bell Div., Longview, Wash.
Personnel: J. D. Leland, Vice Pres.; H. G. Kelsey, Gen. Mgr. Western Operations; T. A. Deal, Gen. Mgr.; W. R. Kletsch, Supt.; O. D. Harrington, Gen. Sls. Mgr.; F. L. Foval, Asst. Gen. Sls. Mgr.; A. L. Mottet, Tech. Dir.
Production: (Rated Annual Capacity) 20,000,000 sq. ft. ¼ inch basis. Flakeboard.
1958 Production: 2,500,000 sq. ft.
Rated Capacity (Tons) 50 daily.
Process: Long-Bell crosscut flake process.
Panel Sizes: 48x96; 16x96; 16x16; 12x12 inches.
Thicknesses: ¼; ⅜; ½; 3/32; ⅛; 3/16 inches.
Spec. Gravity: .70-1.0.
Colors: natural wood colors.
Characteristics: decorative qualities; high dimensional stability; good strength values.
Percent into Cut-Up Sizes: 25%.
Raw Material Used: planer ends.
Uses: interior wall paneling; furniture & cabinet work.
Specialty Items: overlayment; tongue & groove; prefinish.
Trade Names: Flakewood; Flakewall; Veno-O-Wood.
Percent of Product for Own Use: 35%.
Sales Agents: sales offices in all major cities.

JASPER-AMERICAN MFG. CO.
Home Address: P.O. Box 187, Jasper, Ind.
Plant Address: Henderson, Ky.
Personnel: Arnold F. Habig, Pres.; Nestor H. Kuper, Mgr.
Production: (Rated Annual Capacity) 4,000,000 sq. ft. ¾ inch basis.
1958 Production: 2,850,000 sq. ft.
Rated Capacity (Tons): 20 daily.
Process: Kreibaum vertical extrusion.
Panel Sizes: cut to size.
Thicknesses: 1/16 to ¾ inches solid; 1⅛ to 2 inches tubular.
Spec. Gravity: .60.
Characteristics: vertically oriented chips.
Percent into Cut-Up Sizes: 100%.
Raw Material Used: wood scraps.
Volume (from mill residues): 5000 tons annually.
Uses: core material.
Trade Name: Stylemaster Chipcore.
Percent of Product for Own Use: 60%.

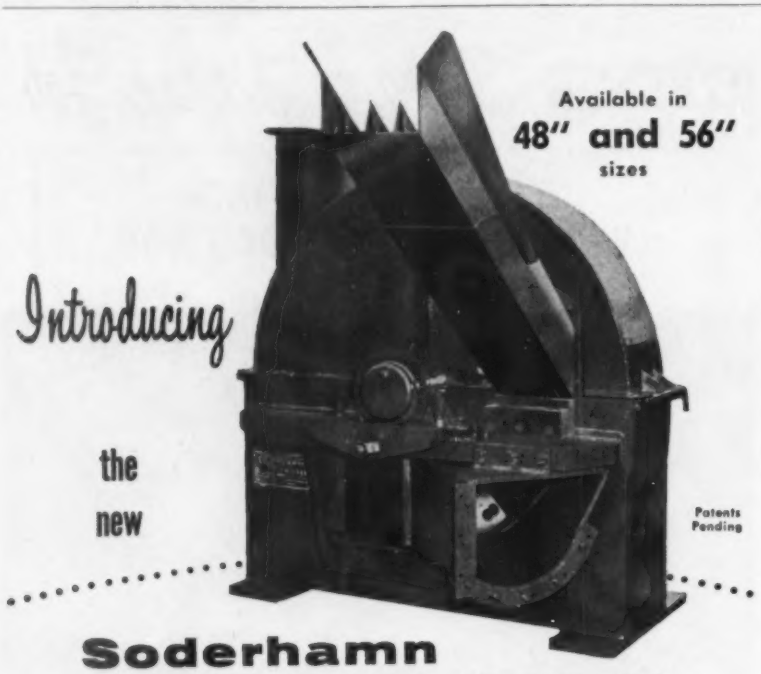
THE LANE CO., INC.
Altavista, Va.
Personnel: H. O. Powell, Pres.; E. H. Lane, Jr., Gen. Mgr.; F. T. Holland, Plant Mgr.; E. W. Davidson, Tech. Dir.; E. A. West, Plant Engr.
Production: (Rated Annual Capacity) 6,000,000 sq. ft. ¾ inch basis.
1958 Production: 4,000,000 sq. ft.
Rated Capacity (Tons): 25 daily.
Process: Lanewood process extruded core.
Panel Sizes: continuous sheet 4 feet wide.
Thicknesses: 9/16 to 21/16 inches.
Spec. Gravity: .65.
Colors: various species.
Characteristics: extruded core with excellent properties for core stock.
Percent into Cut-Up Sizes: 100%.
Raw Material Used: Dried mill waste.
Volume (from mill residues) 7250 tons (based on 250 days).
Uses: core stock for furniture.
Trade Name: Lanewood.
Percent of Product for Own Use: 100%.

LENOIR FURNITURE CORP.
Factory St., Lenoir, N. C.

LESTER PRODUCTS CO.
Sweet Home, Ore.
Under construction. Production anticipated early in 1960.
Product: Cedawood (alder and cedar flakeboard.)
Sales Agents: Columbia Hardbord Co., Seattle, Wash.

MAYO LUMBER CO.
Home Address: Paldi, B. C., Canada.
Plant Address: Nanaimo, B. C. (Under Construction.)
Personnel: R. S. Mayo, Pres.; A. Lestaway, Plant Engr.
Rated Capacity (Tons): 30 daily.
Process: Kreibaum.
Thicknesses: ⅝ to 5 inches.
Raw Material Used: Mill waste.

MISSISSIPPI PRODUCTS, INC.
P.O. Box 492, Jackson, Miss.
Personnel: G. A. Huth, Pres.; Gerry Bracken, Mgr.; John Hamil, Supt.; C. B. Ryan, Sls. Mgr.; John Griffith, Tech. Dir.; George Robinson, Plant Engr.



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DOUBLE DUTY
HORIZONTAL CHIPPER

Now it's no longer necessary to install a separate re-chipper for salvaging oversize chips, cut-offs and similar valuable "scrap." A new and exclusive re-chipper infeed spout takes care of the job! No extra power supply, labor or maintenance cost — just use the original chipper for the whole job!

The new re-chipper spout is specially designed with deeply grooved bottom which positions waste for feeding correctly to the knife. Re-chipper spouts are available on new equipment, or may be installed economically on existing chippers of any make.

Call, wire, or write for details

SODERHAMN MACHINE MANUFACTURING COMPANY
Talladega, Alabama
West Coast: 9442 S.W. Barbur Blvd., Portland, Oregon
British Columbia: Galbraith & Sulley, Vancouver
Eastern Canada: Ferano Limited, Montreal

Production: (Rated Annual Capacity) 2,080,000 sq. ft. 7/8 inch basis.
1958 Production: 1,824,013 sq. ft.
Rated Capacity (Tons): 11.2 (1 shift) daily.
Process: multi-platen.
Panel Sizes: 4x8 feet.
Thicknesses: 7/8 inches.
Spec. Gravity: .7.
Colors: natural.
Percent into Cut-Up Sizes: 100%.
Raw Material Used: southern hardwoods.
Volume (from mill residues): 2,563 tons annually.
Uses: core stock.
Trade Names: Nutex.
Percent of Product for Own Use: 100%.

NORTHERN INDUSTRIES, LTD.

Birch River, Man., Canada.
Under construction.

OWOSSO MANUFACTURING CO.

Benton, Ark.

PACQUA, INC.

P.O. Box 78, Dillard, Ore.
Personnel: W. F. Forrest, Pres.; W. H. Cooke, Mgr.; R. G. Frashour, Supt.; J. J. Longfellow, Sls. Mgr.; J. R. Pfeiffer, S/S Engr.; L. A. Stadig, Plant Engr.
Production: (Rated Annual Capacity) 48,000,000 sq. ft. 3/8 inch basis.
1958 Production: 15,000,000 sq. ft.
Rated Capacity (Tons): 125 daily.
Process: hot platen—oven design process.
Panel Sizes: 48x96; 49x98 inches; smaller on request.
Thicknesses: 1/4; 5/16; 3/8; 1/2; 5/8; 3/4; 7/8; 1 inches.
Colors: natural wood.
Characteristics: uniform density; smooth sanded; decorative; exterior; termite resistant.
Percent into Cut-Up Sizes: 5%.
Raw Material Used: Douglas fir.
Volume (from mill residues): 50,000 tons annually.
Uses: underlayment, soffits, roof decking, batten siding, paneling, cabinets, core material, flooring, concrete form.
Specialty Items: striating; embossing; hardwood overlayment; tongue & groove; prefinish; oiling & edge scaling; specialty machining & cut to size.
Trade Names: Par-Wood; Par-Tex; Par-Tile; IRD; Par-Form; Duo-Faced; 111-D.
Percent of Product for Own Use: Up to 10%.
Sales Agents: Plywood Service, Inc.

PACK RIVER LUMBER CO.

205 Church St., Sandpoint, Ida.

POINSETT LUMBER & MANUFACTURING CO.

Pickens, S. C.
Personnel: W. L. Irwin, Mgr.; C. T. Warner, Supt.; H. H. Connelly, Sls. Mgr.; O. T. Hinton, Tech. Dir.; P. J. Reece, Plant Engr.
Production: (Rated Annual Capacity) 5,000,000 sq. ft. 3/4 inch basis.
1958 Production: 2,500,000 sq. ft.
Rated Capacity (Tons): 27 daily.
Process: Miller Hofft multi-platen.
Panel Sizes: 4x8 feet and cut to size.
Thicknesses: 3/8; 1/2; 5/8; 3/4; 7/8; 1; 1 1/8; 1 1/4 inches.
Spec. Gravity: .641 and .721.
Colors: natural.
Characteristics: warp resistant, dimensionally stable, high screw holding power, good machinability.
Percent into Cut-Up Sizes: 66%.
Raw Material Used: hardwood and softwood particles.
Volume (from mill residues): 3262 tons annually.
Uses: textured paneling, furniture cores, underlayment for plastic laminates and floor tile, building construction.
Percent of Product for Own Use: 50%.

POPE & TALBOT

Home Address: Portland, Ore.
Plant Address: Oakridge, Ore.
Personnel: George Pope, Pres.; J. Snyder, Mgr.; R. Peinecke, Supt.; L. Steers, Sls. Mgr.
Production: (Rated Annual Capacity) 12,000,000 sq. ft. 3/4 inch basis.
Rated Capacity (Tons): 70 daily.
Process: Miller-Hofft.
Panel Sizes: 4x8 feet.
Thicknesses: 1/4; 5/16; 3/8; 1/2; 5/8; 3/4; 1 inches.
Spec. Gravity: 0.65.
Colors: wood color.
Percent into Cut-Up Sizes: 10%.
Raw Material Used: planer shavings, bolts.
Uses: construction and industrial.
Percent of Product for Own Use: None.

POWELL RIVER COMPANY LTD.

Standard Building, Vancouver 2, B. C., Canada.
Under construction.
Production (Rated Annual Capacity): 22,000,000 sq. ft. 1/2 inch basis.

ROCK ISLAND MILLWORK COMPANY

Rock Island, Ill.
Personnel: E. R. Titcomb, Pres.; E. A. Gerber, Gen. Mgr.; J. A. Daubert, Supt.; H. S. Kettrick, Sls. Mgr.; David Haile, Tech. Dir.; Ralph Crespin, Plant Engr.
Production: (Rated Annual Capacity) 25,000,000 sq. ft. 3/8 inch basis.
1958 Production: 20,640,000 sq. ft.
Rated Capacity (Tons): 40 daily.
Process: resinwood high density fine particle.
Panel Sizes: 49x97 inches.
Thicknesses: 3/16; 1/4; 9/32; 3/8; 1/2 inches.
Spec. Gravity: 1.0.
Colors: light tan.
Percent into Cut-Up Sizes: 15%.
Raw Material Used: ponderosa pine, millwork residue.
Volume (from mill residues): 7600 tons annually.
Uses: plastic overlay; bench tops; furniture core.
Trade Names: Resinwood; Resincore.
Percent of Product for Own Use: 5%.

RODDISCRAFT INC.

Timblend Div.
Home Address: Marshfield, Wis.
Plant Address: P.O. Box 248, Arcata, Calif.
Personnel: R. T. Beggs, Pres.; K. R. Cooper, Gen. Mgr.; R. K. Molloy, Mgr.; Roy Hunt, Supt.; Dick Rinde, Sls. Mgr.; Bill Ferry, Tech. Dir.; Will Antonson, Plant Engr.
Production: (Rated Annual Capacity) 24,000,000 sq. ft. 3/4 inch basis.

(Continued on next page)

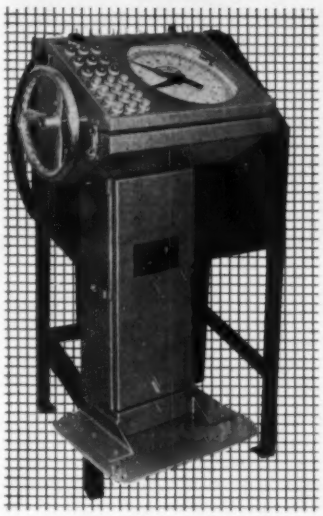
Sel-Set®

ANNOUNCES

ANOTHER NEW ALL PURPOSE

SELECT-⊗-MATIC

ELECTRONIC SETWORKS "MODEL M3LC"



Silhouette of M2LC in the background of this new Model PSEE-12-M3LC shows how every dimension has been decreased.

- **Even Greater Accuracy**
- **Takes Only 1/5 the Floor Space of the M2LC**

Now, through continuing engineering advancements in design and performance, Sel-Set, the leader in carriage automation, is able to offer you the all new, all purpose M3LC . . . A setworks especially designed for **all** mills, regardless of sawbox limitations, who want the very best in setworks performance. This new Select-O-Matic replaces the famous Sel-Set M2LC all-purpose setworks, the only truly all-purpose remote control carriage setworks ever available.

A completely redesigned sawyer's control console for the M3LC has been decreased in every dimension as compared with the former M2LC models so that now every mill can have the advantages of this exclusive all-purpose type of setworks regardless of the size of the saw-box.

Although smaller, the new console provides greater accuracy than ever before for all infinite settings and incorporates even more controls, 32 in all, than the M2LC. Floor space is only 1/5 that of former models and leg room is practically unrestricted.

If you are looking for top performance and production . . . don't settle for less than the best. The new M3LC Electronic Setworks is available for immediate installation. Investigate today and find out why Sel-Set engineering is the most copied in the lumber industry. Other Sel-Set setworks available in models and sizes for any size or type of mill operation. Original Sel-Set double motor in line Power-Pak available for all models.

Authorized Sel-Set Dealers

The Wheland Company
Chattanooga, Tenn.

Klamath Machinery Co.
Klamath Falls, Ore.

Miller Machinery Co.
Missoula, Montana

All Sel-Set dealers have full sales and service facilities available.

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U. S. Patent Numbers 2574393, 2661036, 2661402
Canadian Patent Number 502416-1954

Available in Canada through Elworthy & Co., Ltd., Licensed Manufacturer, Vancouver, B. C.

SEL-SET *Machinery Corporation*

290 Mayer Lane, P. O. Box 1035, Salem, Oregon, EMpire 3-3123

1958 Production: 24,000,000 sq. ft.
Rated Capacity (Tons): 85 daily.
Process: Behr.
Panel Sizes: 4x16 feet.
Thicknesses: ⅜ through 1⅛ inches.
Spec. Gravity: 0.63.
Colors: light tan.
Percent into Cut-Up Sizes: 25%.
Raw Material Used: clean waste wood.
Uses: high quality core. Also all interior and exterior uses.
Trade Name: Timblend.
Percent of Product for Own Use: 20%.

SOUHEGAN WOOD PRODUCTS, INC.
Wilton, N. H.

SOUTHERN BOX & LUMBER CO.
King & Clarendon Sts., Wilmington, N. C.

SOUTHERN PLASWOOD CORP.
Hope, Ark.
Personnel: W. W. Hollowell, Pres.; E. J. Ogran, Vice Pres.; Carl Hicks, Supt.; Gordon Bayless, Sls. Mgr.; Geo. McMorran, Tech. Dir.; Orville Steadman, Plant Engr.
Production: (Rated Annual Capacity) 12,000,000 sq. ft. ¾ inch basis.
Rated Capacity (Tons): 100 daily.
Process: p'aswood—shavings board.
Panel Sizes: 4x8 feet.
Thicknesses: 7/16 to 1½ inches.
Spec. Gravity: 40 to 60 pound cu. ft.
Percent into Cut-Up Sizes: 30%.
Raw Material Used: yellow pine.
Volume (from mill residues): 30,000 tons annually.
Uses: high pressure plastic; laminate core; 3-ply and 5-ply wood; sink tops; floor underlayment.
Specialty Items: platen or sanded surface.
Trade Names: Plaswood Korstok, Underlayment.
Percent of Product for Own Use: None.

SWAIN INDUSTRIES, INC.
Seymour, Ind.
Personnel: F. W. Bottorff, Pres.; D. Billings Swain, Vice Pres.; Paul Aikman, Supt.; L. C. Moore, Sec.; L. J. Heyne, Treas.
Production: (Rated Annual Capacity) 7,000,000 sq. ft. ½ inch basis.
Rated Capacity (Tons): 36 daily.
Process: own.
Panel Sizes: 30x108 & 50x100 inches.
Thicknesses ¼; 1¼ inches.
Spec. Gravity: 0.55-0.76.
Colors: multicolored by wood species.
Percent into Cut-Up Sizes: 90%.
Raw Material Used: mixed hardwoods.
Uses: furniture core stock; chair backs & seats.
Trade Name: Trimwood.
Sales Agents: Illinois Fibre & Specialty Co.

THOMASON CHIPBOARD CO.
Fayetteville, N. C.
Personnel: B. H. Thomason, Jr., Pres.; J. A. Barnes, Mgr.
Production: (Rated Annual Capacity) 4,000,000 sq. ft.
Process: vertical extrusion.
Panel Sizes: 48 inches wide to 12 feet long.
Thicknesses: 1⅛ to 1-9/16 inches.
Raw Material Used: pine chips.
Percent of Product for Own Use: 100%.

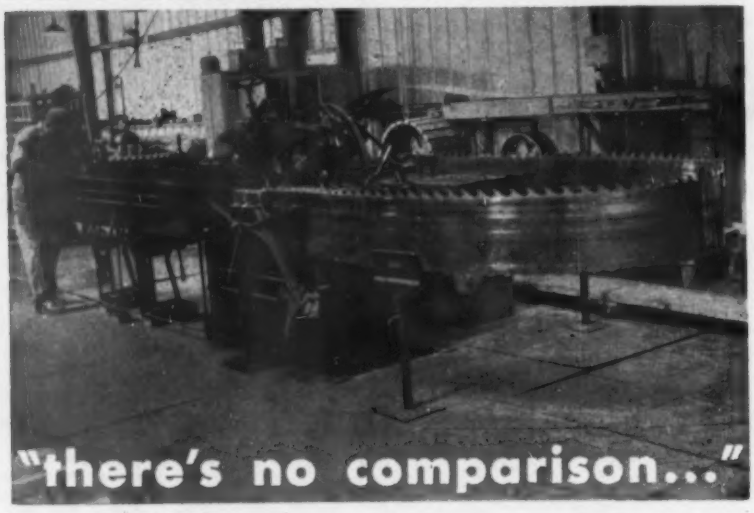
TRAFALGAR MILLS LIMITED
South Nelson, New Brunswick, Canada.
Personnel: J. Leonard O'Brien, Pres.; J. J. Sutherland, Mgr. & Sls Mgr.; R. A. Cameron, Supt. & Plant Engr.
Production: (Rated Annual Capacity) 18,000,000 sq. ft. ½ inch basis.
Process: Plaswood.
Panel Sizes: 48x96 inches and cut to size.

U. S. KORBOARD
120 Wall St., New York, N. Y.
Personnel: Sidney Horne, Mgr.; Matt Faussner, Supt.; Henry S. Lynn, Sls. Mgr.
Production: (Rated Annual Capacity) 25,000,000 sq. ft. ¾ inch basis.
Process: Korboard, horizontally extruded board.
Panel Sizes: 4 feet and any length.
Thicknesses: ½ to 2 inches.
Spec. Gravity: various .60; .55; .50.
Characteristics: good screw holding; good gluing.
Percent into Cut-Up Sizes: 50%.
Raw Material Used: fir, aspen, poplar.
Uses: furniture; doors.
Trade Names: Korboard.

UNITED STATES PLYWOOD CORP.
(Novoply)
Home Address: New York City, New York.
Plant Address: P.O. Box 1688, Redding, Calif.
Personnel: S. W. Antoville, Chmn. of Bd.; G. C. Brewer, Pres., New York Office; K. L. Morrow, Gen Mgr.; W. C. Smith, Prod. Mgr.; R. M. Bailey, Asst. Prod. Mgr.; Mel Fuller, Supt.; L. H. Boudreau, Sls. Mgr.; B. R. Jones, Tech. Dir.; V. E. Daniels, Plant Engr.
Production: (Rated Annual Capacity) 270,000,000 sq. ft. ⅛ inch basis.
1958 Production; 185,160,279 sq. ft.
Process: Novoply—3 ply.
Panel Sizes: 6x12 and 4x16 feet.
Thicknesses: ⅜; ½; ⅝; 11/16; 1; 1-3/16; 1¼; 1⅜; 1-13/32; 1½; 1⅝; 1¾ inches.
Spec. Gravity: .62 to .71 in panels over 1¼ inch.
Colors: Douglas fir color.
Characteristics: attractive mosaic surface; appearance, very flat—warp free, high strength, water resistant. Ideal also as core stock without crossbanding. Many uses overlaid one side only.
Percent into Cut-Up Sizes: 65%.
Raw Material Used: Douglas fir; white fir; Ponderosa pine, sugar pine; chips for core—Douglas fir peeler core for face shavings.
Volume (from mill residues) 40,000 tons annually; (from logs): 9,000 tons.
Uses: construction (interior); sliding doors; folding doors; wall paneling, single wall partitions; furniture—as core stock and natural; sinks, desks.
Specialty Items: prefilling; cut to size; edge-banding; edge machining; predrilling.
Trade Name: Novoply.
Percent of Product for Own Use: None.

VIKO FURNITURE CORPORATION
Eldred, Pa.
Personnel: W. J. Kranz, Pres.; R. Warner, Mgr.; C. Hanks, Supt.
Uses: Frames for seatings.
Trade Names: Vikore.
Percent of Product for Own Use: 100%.

WABASH SCREEN DOOR CO.
Home Address: 310 S. Michigan, Chicago, Ill.
Plant Address: 2222 S. E. Elm St., Minneapolis, Minn.



C. H. Crook, Ferriday, Louisiana says: "Well, I'm back in La. filing for Rogers Lumber Co. They have all Armstrong filing room equipment and it is the first Armstrong band saw grinder I ever saw, and to think I have worked for 40 years with other make saw grinders. *Your grinders have the others beat in a hundred different ways.* I also like your saw stretcher and swages and shapers."

Phil Bernier, Braeside, Ontario says: "We've had our No. 17-60 circular sharpener in operation for over 2 months already and we've never seen a machine sharpening so many different shapes of saws with such accuracy. The two No. 6 model 53 air swages we bought from you are really doing a wonderful job too."

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Founded in 1902 by E. P. Armstrong

Personnel: E. W. Donahue, Pres.; A. M. Struthers, Mgr.; R. Knutson, Supt.; W. M. Steinbauer, Sls. Mgr.; H. G. Freeman, Tech. Dir.; D. E. Westling, Plant Engr.
Production: (Rated Annual Capacity) 4,000,000 sq. ft. ¼ inch basis.
1958 Production: 1,500,000 sq. ft.
Rated Capacity: 11 tons daily.
Process: Miller-Hofft.
Panel Sizes: 5½x6 feet.
Thicknesses: ¼ to ¾ inches.
Spec. Gravity: .70.
Characteristics: good all-around with finer chips and less telegraphing.
Percent into Cut-Up Sizes: 30%.
Raw Materials Used: ponderosa pine chips and 65% solids, UF resin.
Volume (from mill residues): 2750 tons.
Uses: furniture corestock, cupboard doors.
Trade Name: Wabash Wood Particle Board.
Percent of Product for Own Use: 30%.

WESTERN PANEL INC.

1400 18th Ave., Sweet Home, Ore.
Personnel: W. Allen Wodtli, Pres.
Production: (Rated Annual Capacity) 6,000,000 sq. ft. ⅜ inch basis.
1958 Production: 3,123,000 sq. ft.
Process: Chapman.
Panel Sizes: 4x8 feet.
Thicknesses: ½; ⅝; ¾ inches.
Raw Material Used: planer shavings.

WEST VIRGINIA PULP AND PAPER

Building Boards Div.
Home Address: 230 Park Ave., New York, N. Y.
Plant Address: Tyrone, Pa.
Personnel: J. Lynne Ferner, Div. Mgr.; John Churchill, Supt.; J. W. Holdsworth, Sls. Mgr.; C. Morchauser, Tech. Dir.
Production: (Rated Annual Capacity) 19,000,000 sq. ft. ¾ inch basis.
Process: Miller-Hofft.
Panel Sizes: 4x8 foot stock panels, cut to size.
Thicknesses: ½ to 1¼ inches.
Spec. Gravity: 40 pounds.
Colors: white.
Characteristics: strong, smooth surface; tight edge; light weight; light color.
Percent into Cut-Up Sizes: 20%.
Raw Material Used: aspen.
Uses: furniture core; dinette; countertops; sliding closet doors; kitchen cabinets; toys; Hi-Fi sets; etc.
Specialty Items: overlayment.
Trade Names: Westvaco Core; Westvaco Phenol Paper Overlay; Westvaco Birch Overlay.
Percent of Product for Own Use: None.

WEYERHAEUSER TIMBER CO.

United Wood Corp. (Subsidiary Co.)
Home Address: Tacoma, Wash.
Plant Address: West Memphis, Ark.
Personnel: J. L. Aram, Pres.; Paul Kay, Mgr.; Merlyn Hemphill, Supt.; D. C. Greeley, Sls. Mgr.; James P. Papageorge, Plant Engr.
Production: (Rated Annual Capacity) 9,000,000 sq ft. ¾ in basis. Flakeboard.
Process: multi-platen.
Panel Sizes: 56x196; 56x98 inches.
Thicknesses: ½; ⅝; ¾; 1 inches.
Spec. Gravity: .65.
Colors: light tan.
Uses: veneering, laminating, furniture manufacturing.
Trade Name: Versaflake.
Percent of Product for Own Use: None.
Sales Agents: Silvatek Products Division.

WEYERHAEUSER TIMBER CO.

Silvatek Products Div.
Home Address: Tacoma, Wash.
Plant Address: North Bend, Ore.
Personnel: F. K. Weyerhaeuser, Pres.; J. L. Aram, Mgr.; D. E. Isaacson, Supt.; D. C. Greeley, Sls. Mgr.; A. M. Fisken, Mgr. of Mfg.; William R. Cole, Plant Engr.
Production: (Rated Annual Capacity) 12,000,000 sq. ft. ¾ inch basis.
Process: Miller-Hofft-multi platen.
Panel Sizes: 4x8 feet.
Thicknesses: ⅜; ½; ⅝; ¾; 1 inches.
Spec. Gravity: .64.
Colors: natural, light, uniform.
Characteristics: uniform, sanded both faces, hard, dense panel; warp resistant; moisture resistant.
Raw Material Used: green shavings.
Uses: floor underlayment, core stock, cabinet work, furniture mfg.
Trade Name: Versabord.
Percent of Product for Own Use: None.
Sales Agents: Silvatek Products Division.

WILLAMETTE FIBRE AND CHIP BOARD, INC.

P.O. Box 516, Sweet Home, Ore.
Personnel: John Tyner, Pres.; Harold W. Adams, Mgr.
Production: (Rated Annual Capacity) 25,000,000 sq. ft.
1958 Production: 18,000,000 sq. ft.
Rated Capacity (Tons) 32 daily.
Process: platen hot press.
Panel Sizes: 4x8 feet.
Thicknesses: ⅜; ½; ½; ¾ inches.
Raw Material Used: planer shavings.
Trade Name: Westwood.

WOODCORE, INC.

Box 45, Scottdale, Pa.
Personnel: Irving L. Halsted, Pres.; Kenton J. Halsted, Mgr.
Production: (Rated Annual Capacity) 3,000,000 sq. ft.
Process: Chipcraft vertical extrusion.
Panel Sizes: 4 feet width up to 12 feet long.
Thicknesses: from ½ to 1¼ inches.
Percent into Cut-Up Sizes: 40%.
Raw Material Used: oak chips.
Uses: core stock, underlayment.
Trade Name: Scotbord.
Percent of Product for Own Use: None.

WYNNEWOOD PRODUCTS CO.

303 Tena St., Jacksonville, Tex.
Personnel: Angus G. Wynne, Jr., Pres.; K. N. Stordalen, Gen. Mgr.; Wayne Cain, Supt.; Earl H. Williams, Sls. Mgr.; R. R. Bridges, Tech. Dir.
Production: (Rated Annual Capacity) 12,000,000 sq. ft. ⅜ inch basis.
Rated Capacity (Tons): 80 daily.
Process: platen.
Panel Sizes: 4x8 feet.
Thicknesses: ⅜ to 1¼ inches.
Spec. Gravity: 40, 50, 60 pounds cu. ft.
Colors: light.
Percent into Cut-Up Sizes: 50%.
Raw Material Used: southern pine.
Volume (from mill residues): 24,000 tons annually.
Uses: school and church furniture, dinette furniture and building.
Characteristics: Treated for termite, decay & mildew.
Trade Names: Corstoc, Arcatex, Wynnewood 601, Wynnewood 60F.
Percent of Product for Own Use: None.
Sales Agents: L-M Forest Products, Grand Rapids, Mich.; Robert A. Gross, High Point, N. C.; Fred H. Stanford Co., Indianapolis, Ind.; American Wood Prod. Sales Co., Bayside, N. Y.

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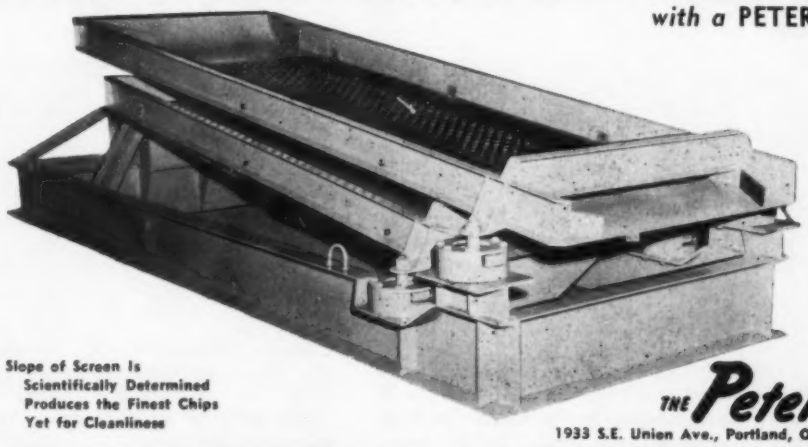

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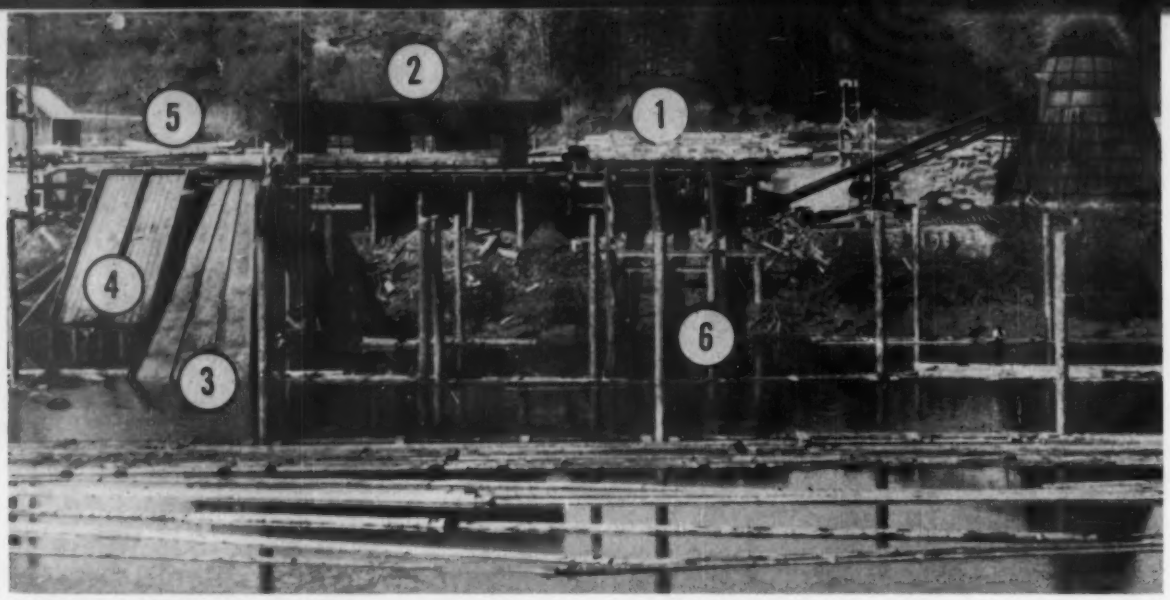


DECK SAW SETUP. Logs are placed on deck (1) by log stacker, proceed through saws (2) with peeler blocks kicked to outside lane (3), sawmill logs down chute (4) to lane to mill. Hemlock and small logs to be sold are bucked to 16 feet and proceed to deck (5). Logs can enter system from river up sidelift (6).

Dry Log Handling with 5-saw bucking results in 75% saving in log handling costs for integrated sawmill-plywood operation

Dry land log handling—unloading, decking, bucking—is saving money and is allowing U. S. Plywood Corp. at Mapleton, Ore. to handle the increased load required by growing sawmill and plywood production in the integrated operation.

A unique L-M five-saw decksaw setup operated by one man from a central console can divide a log into its most profitable parts—combinations of sawlogs or peeler blocks. It can simultaneously trim and buck a log into four peeler blocks.

The jack of all trades in the installation is a 50-ton R. G. LeTourneau log stacker which unloads trucks, places logs for scaling, serves the deck of the bucking installation, cold-decks logs, and does some sorting.

A four-man crew does the work and eliminates two river tugs. In the old operation, logs were dumped into the river with two pondsaws bucking to length. Sorting was done on the water. Often, expenses were increased when peak work-loads required renting outside towboats. Several thousand dollars were invested in boom sticks.

The four men who handle some 200,000 board feet of logs daily through the new system are: 1, The log stacker operator; 2, Layout man; 3, Saw operator; 4, General helper.

3 The LeTourneau log stacker can place the load on the sawdeck, above at right, or in the storage decks which are to the rear of the machine.

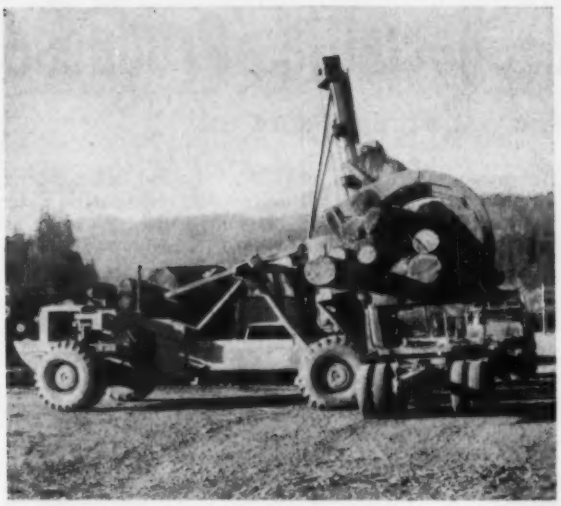
One shift on the saws serves three peeler shifts and one sawmill shift.

Harry Russell, general manager, roughed out the general principles of the system. Detailed planning, engineering and fabrication of the saws and hydraulic system was carried out by L-M Equipment Co., Portland, Ore., and transmission equipment was engineered and fabricated by J. W. Minder Chain and Gear Co., Portland, Ore.

An 11-acre decking area was cleared, allowing an 11-million board-foot capacity in the decks. A good foundation was needed for the heavy decks—logs are decked 20 feet high—so four feet of boulders were put on the runways with a topping of three-inch minus rock.

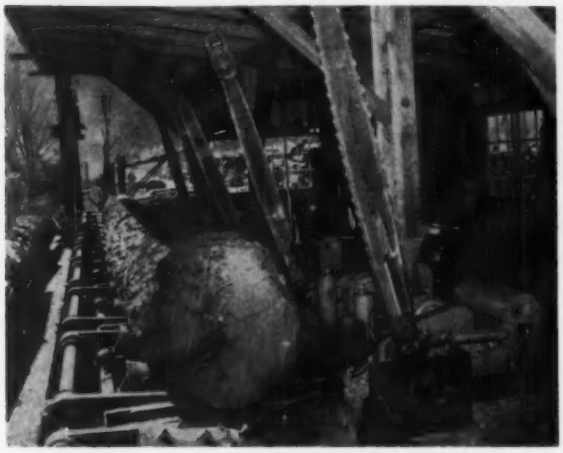
Log stringers were placed in the bays on which to deck the logs. Another project required was placing of piling in the river for two lanes along the river bank to channel the blocks and logs down to their proper destinations.

Logs often come in at a rapid pace. Mr. Russell estimates the stacker can handle the unloading of 80 to 90 trucks daily in addition to decking and serving the saws.

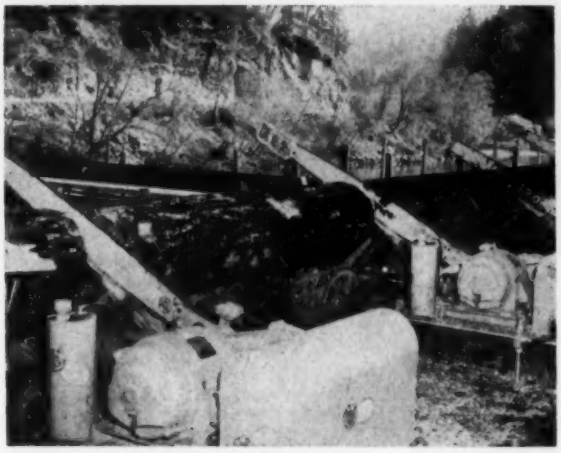


1 Log stacker clamps the load for safety while binders are loosened, then picks the load off the truck and spreads the logs out on the scaling skids.

2 An accurate scale is guaranteed by the scaler's easy access to each log. A Columbia River Log Scaling and Grading Bureau scaler scales the load.



4 Log rolls across under the lineup of five L-M saws. A layout man marks the logs for the most profitable end use. The sawyer is located to the rear.



5 Saw cuts are made simultaneously. Saws are spaced 8½ feet apart for proper trim. Hydraulically operated lifters provides lift on both sides, prevent binding.

6 Closeup of hydraulic lifters. Saw blade goes between lifter sections.

7 Logs and blocks float one mile down proper lanes to mills. Flood sticks hold logs from coming back up lanes during flood tide.

Quality Veneers, Plywood Specialties Produced

at plant utilizing wide variety of domestic and foreign species.

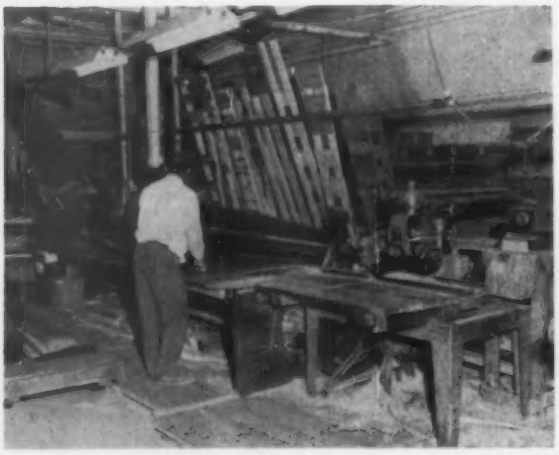
Domestic logs of walnut, cherry, butternut, white oak, red oak, elm, birch and maple, large mahogany logs from Ghana, West Africa, rosewood from Brazil and teak from Siam, are brought in from point of origin, to the storage yard of R. S. Bacon Veneer Co., Chicago.

FLITCHES ARE CUT on a small circular mill and are soaked in vats, one to 10 days, before slicing or peeling. Temperature of water is gradually increased to the cutting temperature of 130 to 190 degrees, depending upon character and species of wood. All flitches are cleaned after soaking to remove foreign matter. Hand tools are used, such as portable, rotary-head surface planer, axe and adz.

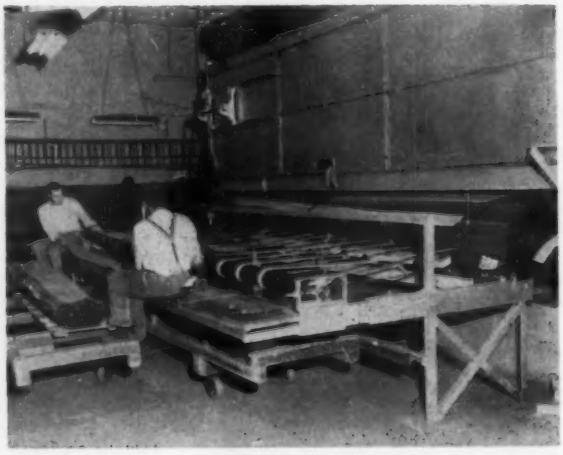
Veneer is sold on basis of square surface feet and priced according to species, quality and thickness. Sample strips

1 A substantial inventory of logs is maintained in the yard at all times as raw material supply for the veneer plant. Also inventoried in the yard area are large quantities of crating lumber which arrives from the company's own sawmill in Iowa. This material is used for crating the final veneer product.

2 Walnut logs are being placed on the inside log deck with a 6-ton Yale overhead crane using tongs. The same type of crane is used to handle veneer flitches in and out of the steaming vats and to convey them to the lathe or slicers. The hoists are remote controlled by a hand push button unit.



5 Measurement is made at the rough clipper of the crate frame which will ultimately package the dried veneer flitches. Both crate and flitch are assigned a number which carries through and identifies the product of each log during the entire operation. The crate will be ready for veneer at the offbear of the dryer.



6 Drying is done in a 60-foot Proctor & Schwartz veneer dryer. Sheets emerge at approximately 8 to 10% moisture content and are stacked in consecutive order in the crate. An overhead bar in center of receiving table supports an electric eye which records for the tallyman the cumulative width of the sheets for each flitch.

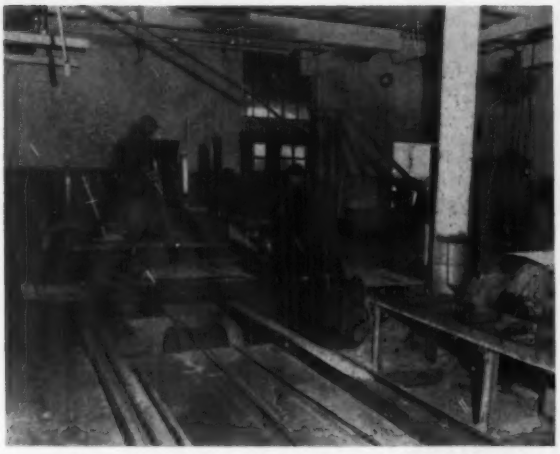
are taken from the discharge end of the dryer, marked at the rough clipper to designate the flitch, and prepared for the sample room. Samples carry the same number as the crate and are identified with the crate and flitch until sold.

At the taping table, numbers are ink-stamped on the samples and the ends are taped to permit handling without splitting. Pricing is also done in the sample room and recorded on a card system, together with other accumulated data.

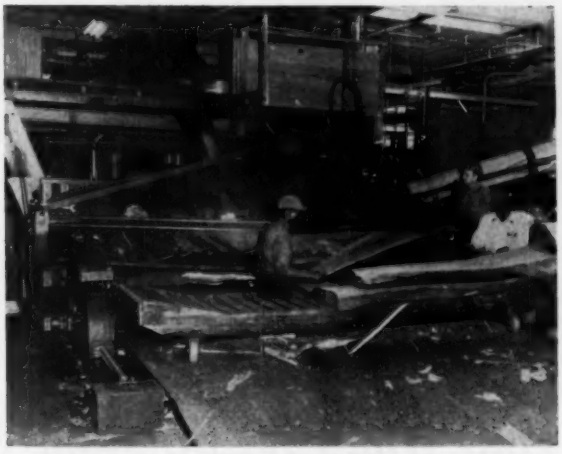
CRATING OF FLITCHES is completed at the discharge end of the dryer. Crates are made up on a Spartan Auto-Nailer. Completed crates are strapped with Signode steel strapping.

A large portion of the veneer produced by the company is sold to furniture and panel manufacturers. However, a portion of the veneer goes into production of Bacon's own "Panawall." This is a 4x8′ panel, ¼″ hardwood plywood construction. It is so designed and manufactured to give true appearance on the wall of tongue-and-grooved random plank.

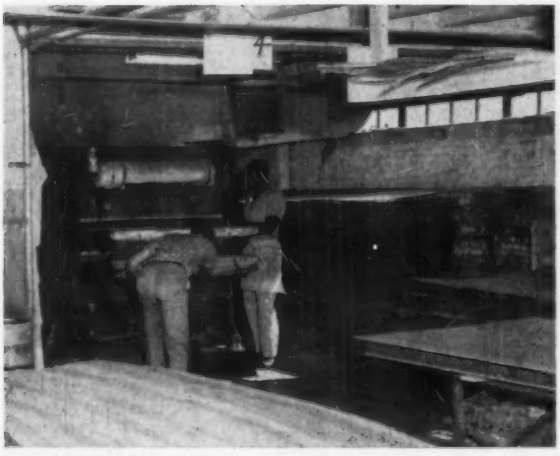
For the production of this paneling, the sheets of veneer are worked into faces and backs. The veneers are cut to gross panel length (100″ for the net 96″ panel) and the edges precision trimmed for edge gluing. Edge bonding is done on a Diehl splicer. All core stock is purchased, cut to size. Lauan is a preferred core for "Panawall."



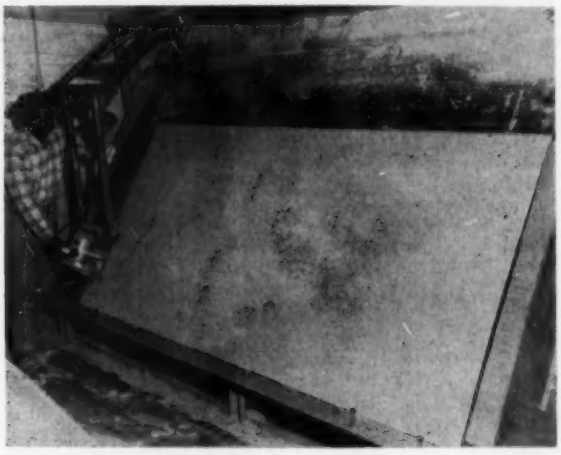
3 Logs are cut to length as they enter the mill with an L-M 7-foot chain-type cutoff saw. Logs then advance to the above pictured 60-inch circular saw which works with a 3-block carriage. The sawmill is used to slab logs and makes flitches for the veneer mill. Slabs move to the fuel room for boiler fuel.



4 Both rotary cut and sliced veneers are produced. Rotary veneer is cut on this Capital veneer lathe. Slicing is done by two Capital slicers. Most sliced output is 1/28-inch thick; machines will produce veneer in the extreme of 1/100 through ⅛-inch. The larger knife machine is 213 inches long.



7 Plywood is laid up on Black Bros. glue spreader. A 2-opening Berthelson hot press forms panels under a uniform pressure of 140 psi at about 270 degrees. Average pressing time is four minutes. Loading and unloading of the press is done by hand. Panels are bulked piled to cool for 24 hours. Sanding is with Timesaver.



8 Panawall is grooved on an oversized drawing board, a panel at a time. Moveable arm carries a portable Skil saw, equipped with a special head. The operator moves the grooving head along each joint, giving random widths, tongue and groove appearance. Panels are offered either prefinished or unfinished.

Small Operators Can Make Chips

SMALL SAWMILL CLINIC PANEL, from left: moderator Orvel A. Schmidt, Charles L. Martin, J. A. Doyle, William K. Stammetz, Jr., and Robert Plunkett.

It's now possible for a small sawmill operator cutting about two million bd. ft. yearly to enter the pulp chip business for a capital outlay of about $16,000. Manufacturers now are producing a number of debarkers that appear well suited for small sawmills cutting up to 20,000 bd. ft. daily. These machines vary in price from $5,000 to $10,000.

This optimistic report was given by J. A. Doyle, Forest Products Laboratory Div., Dept. of Northern Affairs and National Resources at Ottawa, Ontario to the Fifth Annual Northeastern Loggers' Congress meeting at North Conway, N. H., on April 23-24.

THIS BARKER DEVELOPMENT, plus smaller chippers producing about 5 cords per hour, have stimulated diversion of sawmill residues going into pulp. In Canada, the annual volume has climbed from some 2½ million cu. ft. of solid wood in 1951 to about 22½ million cu. ft. in 1958. This represents some 300,000 cords of pulpwood, and amounts to about 2¼% of the total pulpwood production in Canada, exclusive of British Columbia. It's also equivalent to the allowable annual cut on about 1¼ million acres of eastern Canada forests.

Mr. Doyle reported, however, that although sawmills with barkers report many advantages, many report that sawmill production is not increased appreciably. To check this, a study was conducted by the Ottawa Laboratory, FPLC, on a two sided mill (one sawing hardwoods, the second softwoods) cutting about 13M ft. b.m. daily on the hardboard side and 20M ft. b.m on the softwood side.

Preliminary findings indicate that:

• Sawing barked logs gave a slightly reduced lumber recovery when compared with unbarked logs on the same species, size and quality.

• Percentage of log volume convert-

They Won't Retire Their Knowhow

FOREST PRODUCTS MANAGEMENT GROUP of E.M.A. discuss forest industries problem. They are left to right: George L. Drake; Belden Keller; Mahlon Munson; Robert Welsh of E.M.A.; W. H. Rambo; Jerry Barfoot, managing director of E.M.A.; Waldron Hyatt; Stuart Moir; E. J. Brokaw; John DeTar, E.M.A.; Henry Dennis and Donald MacKenzie.

A group of well known western loggers, foresters and lumbermen, have joined together in an aggressive management consulting team to tackle industry problems. They plan to make their more than 400 years of combined experience available to forest products manufacturers and to equipment manufacturers on local, regional, national and world wide basis. While many have retired from previous positions of executive capacities, others are still active.

The Forest Products Management Group is one section of Engineering & Marketing Associates, Inc., of Portland, Ore. It operates under the group management concept. Members collectively examine a problem and arrive at solutions, applying their broad experiences in diversified but related fields. They tackle problems ranging from forest research and taxation, through product development and marketing.

In its broad application, the forest products group of E.M.A. can take any part, or a complete contemplated operation from the forest to the market. It can determine inventories, execute the indicated plan of utilization, do the necessary plant engineering and supervise construction of plants. It can then organize and place forest management plans into effect, set up administrative and operating plans for converting plants on through product marketing. Each problem is considered by the team in every aspect. It arrives at a solution and assigns specific members of the team to carry through their portion of the program.

Engineering and Marketing Associates is a management company, organized to provide experience and successful operating techniques to projects requiring economic planning, engineering and administrative skills on a consulting basis. Each phase is directed by qualified men. E.M.A. services are offered to many industries. Each field has a separate management group.

Most recently organized is the Forest Products Management Group who are having fun by not letting their knowledge retire. Members of the wood industries group read like a "Who's Who" in the forest products field. They include WALDRON HYATT, formerly executive vice-president, Hammond Lumber Co., Samoa, Calif.;

ed into lumber decreased from 58.6% to 50.7% for yellow birch and from 59.9% to 56.1%.

Contributing factors to this apparent decrease:

- 10% increase in production of one inch hardwood lumber found in the second phase of the study.
- A change in sawyers.
- Heavier slabbing after initiation of a pulp chip program, with a tendency to put some low grade lumber into the slab pile for chipping.
- Fewer saw changes were required on barked logs. An increase of 11% in volume of lumber sawn showed up between blade changes in hardwoods and a 39% increase for softwoods. Saw maintenance, too, was reduced.

CHIPS INSTEAD OF SAWDUST are being produced with an experimental blade at the Forest Products Laboratory in Madison, Wis., Mr. Doyle reported.

In Canada, a new planer-chipper converts the sawmill planing operation into a chip producing one. The knife severs the grain and the chip is lifted cleanly off the board. Cutting is done across the grain. Production of chips is about 200 cu. ft. for every five M board ft. of lumber processed. This planer-chipper handles lumber at 1000 lineal ft. a minute. Three of these machines are now being developed in cooperation with a large lumber company in B. C.

FIBERBOARD FROM BARK is being investigated at the Ottawa Laboratory, FPLC. A hardboard with desirable properties has been produced from spruce and balsam fir drum barker residues.

Lumber buyers want more quality in lumber and more service, reported Robert Plunkett, Plunkett-Webster Lbr. Co., Inc., New Rochelle, N. Y. His findings were based on a questionnaire survey in the New England area.

STICKER MARKING on birch and maple has been found particularly objectionable, said Mr. Plunkett. He suggested that storage in an open pole type shed apparently eliminates some of this trouble, according to research reports. More sticker care should be stressed.

Customers were most vocal about lack of good service in having lumber orders filled. They wanted prompt acknowledgment of orders, to know if the items can be delivered; shipping on time or letting customers know about late shipment, and prompt sending of invoices. Dependability of lumber supply was their prime interest.

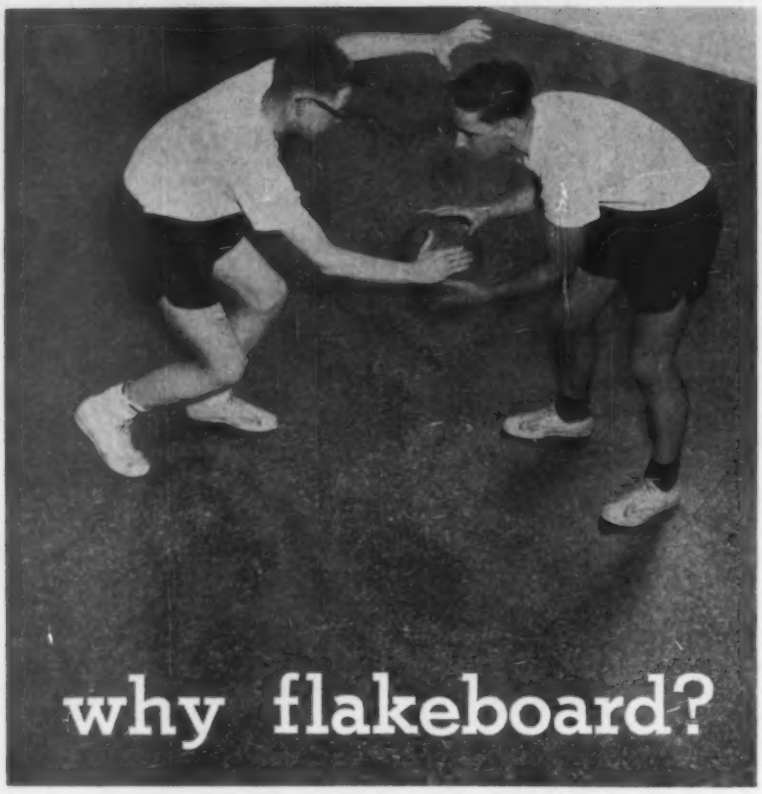
Three basic floor plans for the small sawmill were presented by Wm. K. Stamets, Jr., Northeast Ohio Machine Builders, Inc., Columbiana, Ohio. He said that more recently built small mills, cutting less than 10M bd. ft. daily, have gone to two sides and a single edger. The screwblock carriage might stage a comeback.

He predicted that the light weight aluminum carriage will be predominant in the mill of the future. It should weigh about the maximum log weight. Mr. Stamets advised against too fast feed rates, which might be beyond the saw's capacity to handle. The tendency is toward electric feeds, which cost more, but are simple and power regenerative.

GEORGE L. DRAKE, formerly vice president of Simpson Logging Co., Shelton, Wash.; FRANK DRUMB, formerly president of Crown Zellerbach's Canadian Western Lumber Co., Vancouver, B. C.; DONALD MACKENZIE, formerly executive vice president of Lumber Division of Anaconda Company, Bonner, Mont.; BELDEN KELLER, formerly executive vice president Pickering Lumber Co., Standard, Calif.; E. W. DANIELS, retired president of Harbor Plywood Corp., and formerly president of Douglas Fir Plywood Association; CLYDE MARTIN, formerly chief forester, Weyerhaeuser Timber Co., Tacoma, Wash.; HENRY DENNIS, formerly vice-president, Scott Paper Co., Everett, Wash.; EDWARD HANZLIK, formerly chief, forest management section, U. S. Forest Service, Portland, Ore.; E. HILL JONES, former chief timber buyer, Crown Zellerbach Corp., Portland, Ore.; STUART MOIR, retired Forest Counsel, Western Forestry & Conservation Association, Portland, Ore.; MAHLON MUNSON, presently executive secretary, National Plywood Distributors Association and E. J. BROKAW, formerly assistant comptroller for Crown Zellerbach.

Other consultants included are: W. H. RAMBO, industrial plant engineer, Portland, Ore.; VERTREES YOUNG, formerly vice president Crown Zellerbach Corp.; JULIAN M. WHITE, formerly vice president, Long-Bell Div., International Paper; LEO BURDON, formerly a vice president, Weyerhaeuser Timber Co.; RALPH BENSON, retired vice-president and sales manager of C. D. Johnson Lumber Co., and lumber sales manager of Georgia-Pacific, Portland, Ore.; L. H. FUCHEK, formerly general manager of Pope & Talbot, Inc., Oak Ridge, Ore., operations, Seattle, Wash.; LEO ISAACS, retired chief of management section, U. S. Forest & Range Experiment Station, Portland, Ore.; DR. EMANUEL FRITZ, retired professor of forestry, University of California; E. T. F. WOHLENBERG, formerly general manager Masonite's Ukiah, Calif. operations and professor at Yale University; CHARLES L. WHEELER, formerly executive vice-president and now special vice-president of Pope & Talbot, Inc., San Francisco; SIDNEY B. LEWIS, formerly vice-president an general manager, Willamette Valley Lumber Co., Dallas, Ore. and Mt. Jefferson Lumber Co., Lyons, Ore.

CASCADES PLYWOOD CORP. has established a new division in Los Angeles, Calif., to serve manufacturing and industrial firms in the area with custom manufactured boards. The installation contains 14,000 square feet of warehousing space and 16,000 square feet of operating space. Equipment is available for sawing, edge-shaping, multiple drilling, boring, routing, dadoing, mortise and tenon joints, and perforating.



CEDAWOOD* is 100% Flakeboard, no coarse chip center. It is a better panel because an all cross-laminated flake panel is overall stronger, the same principle as in Plywood. Also:

1. **CEDAWOOD** is over one-half Hardwood**. It is tough (as abrasion resistant as Oak flooring).
2. The more dense flake center obtains full utilization for both nails and screws in the face and the edge.
3. Solid flakeboard is less likely to give rise to starved glue lines along veneered edges since glue absorption is constant.
4. Higher physical properties are achieved with less resin by eliminating chip core in favor of cross-laminated flakes.
5. It is sound absorptive (¼" punched **CEDAWOOD** NRC with 1½" Fiberglass backing is .55***).
6. **CEDAWOOD** in any thickness is good always on two sides.

*Reg. T. M. for Columbia's Family of Flakeboards.
**Deciduous-Coniferous CEDAWOOD blend patent applied for.
***Riverbank Acoustical Laboratories (as a comparison, ½" wood fiber ceiling tile averages .55).

Columbia Hardbord Co., P. O. Box 1874, Seattle 11, Wash.

cedawood

LUMBER PRICES

Douglas Fir

1x8	Utility S4S KD	$ 62- 67.00
2x4	Construction Dimension S4S KD	94- 96.00
1x4	C&Br VG Flooring KD	175-180.00
1x6	C&Br Drop Siding KD	155-160.00
1x6	C&Br S4S KD	170-175.00
1x8	C&Br S4S KD	170-175.00
1x10	C&Br S4S KD	175-180.00
1x12	C&Br S4S KD	215-229.00

Construction Timbers and Plank

3x12	6-20 feet	$ 91- 94.00
3x12	22-24 feet	96- 99.00
3x12	26-32 feet	104-109.00
4x4	8-20 feet	92- 95.00
4x4	22-24 feet	97-100.00
4x4	26-32 feet	106-111.00
6x6	8-20 feet	91- 94.00
6x6	22-30 feet	98-101.00
6x6	32-40 feet	113-116.00
8x8	8-20 feet	90- 93.00
8x8	22-30 feet	95- 98.00
8x8	32-40 feet	110-113.00
6x10, 8x10, 10x10, 12x12	8-20'	88- 91.00
6x10, 8x10, 10x10, 12x12	22-30'	93- 96.00
6x10, 8x10, 10x10, 12x12	32-40'	108-111.00

Construction Dimension (Green)

2x4	6-24 feet	$ 83- 85.00
2x6	6-24 feet	83- 85.00
2x8	6-24 feet	83- 85.00
2x12	6-20 feet	84- 86.00

Standard & Btr. Boards (Green)

1x4	6-20 feet	$ 65- 68.00
1x8	6-20 feet	75- 78.00
1x12	6-20 feet	74- 77.00

Douglas Fir Plywood

¼-inch AD S01S $85.00

Southern Pine (KD Stock)

Vertical Grain Flooring

	B	C	D
1x4	$210.00	$190.00	$153.00

Flat Grain Flooring

1x4	155.00	145.00	130.00
1x6	185.00	177.00	120.00

Drop Siding

1x6 No. 106	190.00	182.00	132.00
1x6 No. 116	190.00	182.00	132.00

Boards and Shiplap

	1x6	1x8	1x10	1x12
No. 1	$130.00	$130.00	$130.00	$175.00
No. 2	85.00	88.00	87.00	98.00
No. 3	72.00	82.00	80.00	80.00

No. 1 Dimension

	12	14	16	18	20
2x4	102.00	102.00	102.00	117.00	117.00
2x6	100.00	100.00	100.00	112.00	112.00
2x8	99.00	97.00	95.00	110.00	110.00
2x10	105.00	104.00	106.00	120.00	120.00
2x12	115.00	110.00	110.00	120.00	125.00

No. 2 Dimension

	12	14	16	18	20
2x4	97.00	97.00	97.00	109.00	109.00
2x6	93.00	93.00	95.00	104.00	106.00
2x8	96.00	94.00	93.00	100.00	104.00
2x10	96.00	98.00	96.00	105.00	105.00
2x12	99.00	99.00	99.00	110.00	115.00

Western Pine

Ponderosa Pine

Selects S2 or 4S	4/4 RW	5/4 RW	6/4 RW
C Select RL	$255.20	$264.41	$260.65
D Select RL	170.09	188.24	182.02

Shop S2S	No. 1	No. 2
5/4	$140.42	$108.26
6/4	138.12	106.28

Commons S2 or 4s	No. 2	No. 3
1x8" RL	$102.32	$ 78.51
1x12" RL	114.79	83.45

4/4 No. 4 Common S2 or 4S $ 63.10

Idaho White Pine

Selects S2 or 4S	4/4 RW	6/4 RW
Choice (C) RL------	$263.17	$290.00
Quality (D) RL------	169.18	249.00

Commons S2 or 4S	Col. (1)	Ster. (2)	Std. (3)
1x8" RL ----------		$131.10	$ 90.59
1x12" RL ---------		159.73	100.98
4/4 Utility (No. 4) S2 or 4S RW&L----$			63.50

Sugar Pine

Selects S2 or 4S	4/4 RW	5/4 RW	6/4 RW
No. 1 & 2 Clear RL--	$282.42	$282.13	$282.79
C Select RL--------	270.71	271.94	272.09
D Select RL--------	187.16	198.73	196.45

Shop S2S	No. 1	No. 2	No. 3
5/4 ----------$	145.65	$110.66	$ 78.08
6/4 ----------	142.99	107.94	76.68
8/4 ----------	163.97	122.31	81.28

Larch-Douglas Fir

4/4 No. 3 Common S2 or 4S----------$	56.87
2x4 No. 1 Dimension RW&L----------	87.38
2x4 No. 2&Btr. Dimension RW&L------	78.79

OBITUARIES

SAMUEL M. NICKEY SR., 90, a pioneer in the hardwood lumber industry, died at a Memphis, Tenn., hospital on April 4. Mr. Nickey started in the southern hardwood industry in 1897 when he, his brother W. E. Nickey and his father A. D. Nickey, founded the Green River Lumber Co. at Gallaway, Tenn.

In 1903 the firm was moved to North Memphis and in 1907 became Nickey Bros., Inc.

Mr. Nickey was a staunch believer in conservation and in 1945 helped establish the Nickey Hardwood Tree Farm Program under which the firm helped small landowners to manage their hardwood stands.

He served on three different occasions as president of the Southern Hardwood Traffic Association.

Survivors include his sons, S. M. Nickey, Jr.; a daughter, Mrs. Jeter Eason; and his brother, W. E. Nickey, all of Memphis, and his sister, Mrs. Alice N. Sander, San Francisco, Calif.

S. M. SIMPSON, 72, founder and chairman of S. M. Simpson, Ltd., Kelowna, B. C., largest manufacturer of lumber and plywood in interior British Columbia, died recently while on a vacation trip to Australia.

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208 La Salle Street, Chicago, Ill.

NOMINAL QUOTATIONS

June 5, 1959

STOCKS	Paid 1958	This Month Bid	This Month Ask	Last Month Bid	Last Month Ask
Ambassador Oil, Com.	$ ----	3½	3¾	3⅜	3¾
American Forest Products, Com.	1.00 GS	34	OW	31	33
Anderson Tully Co., Capt. Stk.	20.00	250	OW	250	OW
Atlas Plywood, Com.	----	14⅛	C	13	C
Atlas Plywood, $1.25 Pfd.	----	23½	25	20½	22½
Biles-Coleman Lbr. Co., Com.	*	18	OW	17	OW
Boise Cascade Corp., Com.	.60	49	52	41	44
George E. Breece Lbr. Units	.30	2½	OW	2½	OW
British Columbia Forest Prod., Com.	.08	15¾	C	16⅞	C
Brooks-Scanlon, Inc. "A"	.55	19½	OW	20	OW
Brooks-Scanlon, Inc., "B"	.55	19½	OW	20	OW
Calaveras Land & Timber Co., Com.	2.00	26	OW	25	OW
Calcasieu Paper Co., Com.	1.50	25	OW	25	OW
Cascades Plywood Co., Com.	1.75	35¼	37	33½	35
Central Coal & Coke Co., Com.	1.00	30	33	27	30
Cherry River Boom & Lbr., Com.	----	33	OW	33	OW
Chicago Mill & Lbr. Co., Com.	1.25	26½	28	27½	29½
Cloquet Lumber Co., Com.	*	1	OW	1	OW
Consolidated Naval Stores, Capt. Stk.	30.00	850	OW	810	OW
Container Corp., Com.	1.00	26¾	C	27½	C
Container Corp., 4% Pfd.	4.00	91½	C	91½	C
Crossett Company, Class "A"	.60	43	45	37	39
Crossett Company, Class "B"	.60	43	45	36½	38½
Crown Zellerbach, Com.	1.80	52⅜	C	56¼	C
Crown Zellerbach, $4.20 Pfd.	4.20	94	C	96½	C
Curtis Companies, Com.	----	11	12	10¾	11¾
Dierks Forests, Inc.	5.00	135	OW	125	OW
Evans Products, Com.	.25	22⅝	C	23½	C
First Lumber Corp. Com.	----	25½	27		
Fordyce Lumber Co., Capt. Stk.	1.00	40	OW	40	OW
General Plywood, Com.	----	23	C	22⅛	C
Georgia-Pacific Co., Com.	1.00 GS	62⅛	C	65	C
Harbor Plywood, Com.	.40	21⅛	C	21⅛	C
Edward Hines Lumber Co. Com.	2.50	45	47	45	47
Insular Lumber Co., Com.	1.25	11½	13	11½	13
International Paper, Com.	3.00 GS	118	C	116¾	C
International Paper, $4 Pfd.	4.00	90	C	90½	C
Keyes Fibre Co., Com.	1.20	27	29	27¾	29½
Kirby Lumber Corp. Com.	1.00	45	47	43	45
Longview Fibre Co., Com.	3.00	92	OW	91	OW
Louisiana Central Oil & Gas., Com.	10.00	50	OW	50	OW
Louisiana Long Leaf Lumber Co.	5.00	150	OW	150	OW
Louisiana Sawmill Co., Com.	----	½	OW	½	OW
MacMillan & Bloedel, "B" Com.	1.05	39¾	C	40¾	C
McCloud River Lumber Co., Com.	4.00	81	OW	80	83
McCloud River Railroad, Com.	2.00	35	OW	35	OW
Meadow River Lumber Co., Com.	*	200	OW	200	OW
Medford Corp., Com.	7.00	210	OW	195	OW
Mississippi Land Co., Capt. Stk.	1.50	12	OW	12	OW
Northwest Paper Co., Com.	.80	33	OW	32	OW
O. & N. Lumber Co., Capt. Stk.	3.00	42	OW	42	OW
Olin Oil & Gas, Com.	----	21¾	23	20½	22
Ozan Lumber Co., Com.	2.00	90	OW	90	OW
Pacific Lumber Co., Capt. Stk.	2.80	300	315	280	OW
Pickering Lumber Co., Com.	.30	11¼	12¼	11½	12½
Pine Tree Manufacturing Co.	3.65	50	OW	50	OW
Pope & Talbot, Inc. Com.	1.00	33½	35	30	32
Pope & Talbot, Inc., Pfd.	.30	4⅞	5½	4⅞	5½
Potlatch Forests, Com.	1.00	59½	62	58½	62
Powell River Co., Ltd., Com.	1.50	37¼	40	40	42
Puget Sound Pulp & Tbr. Co., Com.	.80	23	C	24⅛	C
Richmond Cedar Works Mfg. Com.	----	¾	1¼	½	1
Richmond Cedar Works, Com.	----	1¾	2½	1½	2¼
Ritter, W. M., Lumber Co., Com.	2.00	40	43	40	44
Roddis Plywood, Com.	.10	14	15	15½	16½
St. Regis Paper, Com.	1.40	48¼	C	49⅞	C
Southern Minerals Corp., Com.	----	5	6	5½	6½
Southwest Lumber Mills, Com.	----	12	13½	11½	13
Tremont Lumber, Com.	2.00	65	OW	65	OW
U. S. Plywood, Com.	1.62½	53¼	C	52½	C
Union Lumber Co., Com.	1.25	52	55	53½	OW
United States Lumber, Com.	.35	5¼	6¼	5½	6½
Upson Company, Com.	.80	13	14	12½	13½
Weyerhaeuser Timber, Com.	1.00	45½	47	42¾	44½
Winton Lumber Co., Com.	.92	15	OW	15	OW
Wood Conversion Co., Com.	.40	19	OW	18	19½
Wooduse, Inc., Com. (Now Fersolin Corp. Com.)	----	¾	1	1	OW
BONDS					
Georgia-Pacific Corp. Subordinated Deb., 5s due 1976		85	89	86½	90

* Information not available
OW—Offerings Wanted
BW—Bids Wanted
C—Last sale on Exchange where listed or bid
S—Stock

THE ABOVE INFORMATION, WHILE NOT GUARANTEED, IS OBTAINED FROM SOURCES WE BELIEVE TO BE RELIABLE

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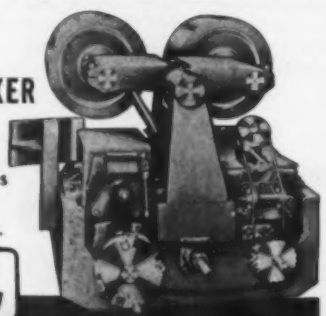

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Architect Specifies Dry Lumber But Has Difficulty Finding It

A Eureka, Calif., architect told members attending the 11th annual meeting of the Western Dry Kiln Clubs in Eureka, Calif., that it is easier for him to specify dry lumber for a client's home or building than it is to get such lumber.

A spokesman for the FHA stressed the point that the FHA sets standards and makes inspections but that it is not a police force for the home buyer.

And representatives from industrial and research organizations reported on subjects ranging from reduction of boiler scale and elimination of brown stain to the myriad segregations necessary in the drying operation at a furniture factory.

William Van Fleet, A.I.A., speaking on "Dry Lumber—An Architect's Dilemma," said dry lumber earns its cost. He said he sells clients on the use of dry lumber, and its higher cost, on the basis of its being a preventive against later possible costs stemming from use of green lumber.

Specifying dry lumber, he opined, seems to have three difficulties: cost, availability and, finally, trying to keep the lumber protected when dry lumber has been delivered.

He said he does not find much problem in obtaining dry 1-inch stock, but does have some problems in getting dry 2-inch T&G. A big boon to the industry in the local area (north coast redwood region), he feels, would be an ample supply of dry lumber that people could afford. The need and the market exist, he said, but industry effort is needed to get this off to a good start. Some practices Mr. Van Fleet follows include:

- Having green lumber delivered to the job site at time of grading, thus allowing added time for air drying.
- Holding off closing the house in until the last possible time so that further drying can take place.
- Requiring adequate protection when dry lumber is specified and delivered.

He concluded his remarks with three provocative thoughts for contemplation by his listeners:

- A lot of dry lumber is being shipped from here to the east. We could use some of it here.
- The growing practice of wrapping siding and finish lumber is wonderful —what about the same thing for studs and sheathing?
- And could there be a practical way of utilizing heat from the mill burners to keep already dry lumber dry in storage?

Arnold Runo, San Francisco, discussed FHA's Minimum Property Standards as they apply to moisture content of lumber. He told his audience that their own intra-industry questions and discussions on moisture content of lumber are more than matched by the gamut of questions and complaints FHA receives from home owners who mistakenly believe FHA is an enforcement agency and that its standards are in reality a code.

He stressed that the standards are exactly that: standards which builders can use as references. The MPS now are available from the Government Printing Office in a single volume for the first time. FHA, he concluded, makes three inspections of buildings.

PHOTO BY U SEIN WIN, MANDALAY, BURMA

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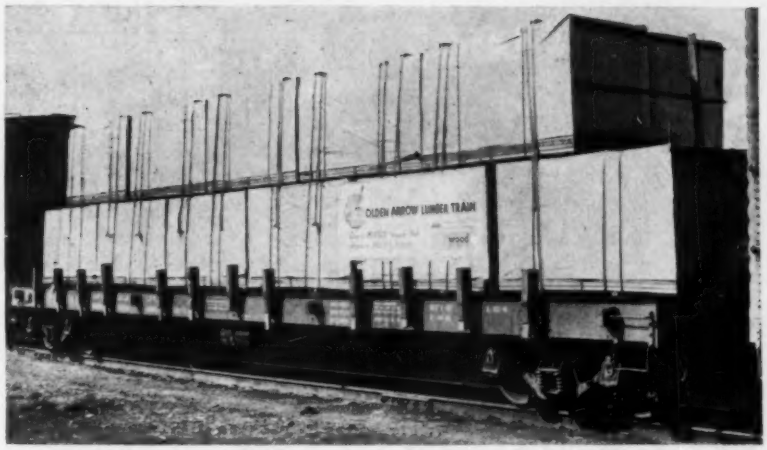
Richard B. Carey, Calgon Co., San Francisco, described the measures used to eliminate boiler scale and condensate line corrosion. There are two means of reducing scale-forming minerals in water before pumping it into the boilers: the hot process lime-soda softener and the zeolite softener. Internal treatment for prevention of scale and corrosion depends on the chemicals: phosphate, caustic soda, and sodium sulfite.

Neutralizing and filming amines are used to prevent condensate return line corrosion, with the filming amines being better corrosion inhibitors.

Addition of antifoams and dispersives is sometimes overworked, he explained. These should not be used as a crutch to support poor engineering or poor design.

And a final step for complete control over boiler conditions is blowdown.



FLATCAR SHIPMENT of packaged lumber products was recently promoted in the "Golden Arrow Lumber Train." A train load of lumber products was gathered from various western points and coordinated at Savana, Ill., from where it moved east attended by wide publicity. In the train was the pictured shipment of studs from Morrill & Sturgeon Lumber Co., Portland, Ore., covered with a prefabricated cover manufactured by Porto Corporation, Vancouver, Wash.

Canadian Laminaters Name Nichols Chief

W. K. Nichols, vice president of Timber Preservers, Ltd., New Westminster, B. C., has been chosen president of the Canadian Institute of Timber Construction, following its spring meeting at Harrison Hot Springs, B.C.

W. M. Hall, of Glulam Products, Ltd., New Westminster, is vice president of the association's fabricating division. B. C. Morton, American Fabricators, Ltd., also of New Westminster, is a new director.

A joint committee on gluing and treating techniques has been formed, with J. M. Gurd, New Westminster, in charge. It will co-operate closely with the American Wood Preservers Institute of Timber Construction in drawing up specifications and procedures.

•

• Everett Reichman has been named technical director of Simpson Logging Co. at Shelton, Wash. He has served as laboratory superintendent.

110

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in any degree of automation.

Presses for particle board, plywood, hardboard, plastic overlays, plastic laminates.

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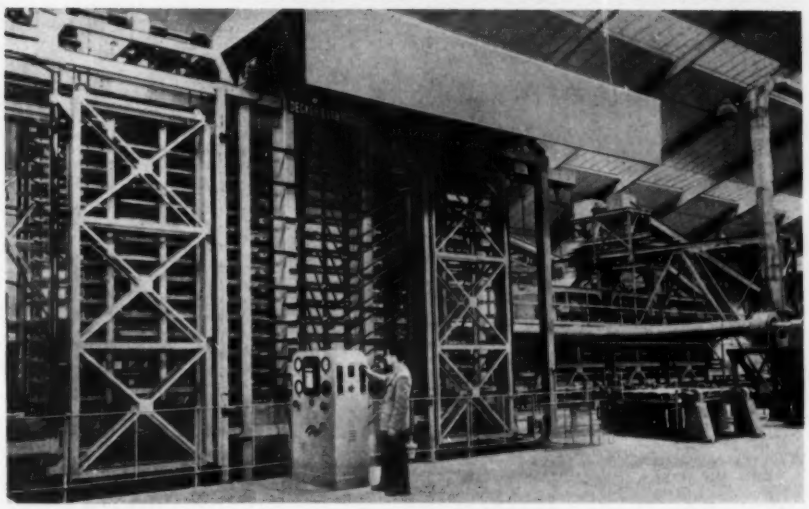

Sole U. S. representative: KARLTON MACHINERY CORP., 210 E. Ohio St., Chicago 11, Ill.

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SAWS, KNIVES, ROUTERS

FOR FAST, CLEAN, PRECISION PRODUCTION WITH LONGER WEAR, MINIMUM MAINTENANCE

CARBIDE SAWS—
A complete line of custom-quality saws for fast, prolonged production at lowest cost. All teeth tipped with tungsten-carbide, hardest metal yet developed for this purpose. Stays sharp 30 to 50 times longer than steel. Specially designed for trimming, skimming. Other Nielsen quality saws include Texture 1-11 sets, hogging units, patch saws.

CARBIDE CUTTERS, ROUTER BITS—
For the most exact cutting and finishing, with long service and minimum maintenance. All types of special carbide-tipped router bits, shim saws, patch cutters for plywood production. Special patch cutters and router bits custom designed and manufactured for the wood, plastic and metal working industries.

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A wide range of 1" to 1¾" "job-tempered" band saw blades. Every Nielsen blade of finest quality saw steel, specially tempered, set and ground for the plywood and board industry. Custom lengths to fit any machine. Metal cutting blades also available.

CHAIN GRINDERS—
Nielsen Model H chain grinding machines for all pond, deck, and core cut-off saw chains; Model 250 for grinding all types of saw chain and circular saws.

CUSTOM SHARPENING SERVICE—
Nielsen offers round-the-clock sharpening and repair service for all types of carbide tipped cutters and saws.

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Complete design and engineering service for special-purpose cutters such as tongue-and-groove, scarfing and v-grooving saws.

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INDUSTRY TRENDS

(Continued from page 8)

NATIONAL LUMBER PRODUCTION at the end of four months totals 11.4 billion feet, 12% above the same period of 1958. Shipments are up 14%, new orders up 17%. Gross mill stocks are 6% below the level of a year ago. The softwood unfilled order file is up 15% over a year ago; hardwood lumber unfilled order files are off 15%.

PRESERVATIVE TREATMENT of lumber fell off in 1958 to the lowest level in 20 years, according to preliminary figures from the U. S. Department of Agriculture and American Wood Preservers' Association. Treatment was made on 217 million cubic feet compared with 275 million cubic feet in 1957. The greatest decrease was in cross ties, down from 31.5 million cubic feet to 21.3 million cubic feet. Only fence posts gained, from 20.8 million to 21.9 million cubic feet.

RAILROAD PURCHASES of lumber products in 1958 totaled $76 million, down $53 million from 1957. Over half of the railroad's purchases were for crossties. Rough and finished lumber expenditures were $17 million; switch and bridge ties and timber expenditures were $11 million. An increase in purchases of timber products is expected in 1959.

GROWING HARDWOOD USE is brightening the outlook for many of the nation's tree farmers, American Forest Products Industries, Inc., reports. The AFPI points to U. S. Department of Commerce figures which show that while over-all consumption of pulpwood in 1958 dropped 1% under 1957, still more regions showed rather large increases in the use of hardwoods.

Regional hardwood gains ranged from 1 to 12% and occurred in all areas except the south-central where there was a decrease of 6%.

The demand for the hardwoods from the pulp and paper industry can be expected to continue in 1959. The Department of Commerce says a consensus of industry executives and economists indicates the demand for paper and paperboard in 1959 would be up 4 to 5% over 1958. This could mean an all-time high production record of about 32 to 32.5 million tons.

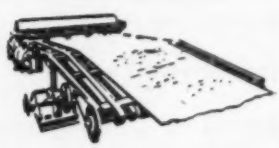
CONSTRUCTION ACTIVITY in May increased seasonally to $4.6 billion, 15% ahead of a year ago. This is a new record for the month. The departments of commerce and labor say the cumulative expenditures of $19.7 billion in the first five months is also a record.

Private construction outlays of $13.9 billion are dominated by spending for work on new housing which is 36% above the same period of a year ago.

COE

VENEER MACHINERY

LATHES
CLIPPERS
DRYERS
KNIFE GRINDERS



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SUPERIOR DRYING — THE KEY TO GREATER PROFITS!

In one way or the other, just about everybody makes use of veneer — in home construction, in furniture, in boatbuilding and in countless other products which make our lives fuller and more comfortable. For the plywood manufacturer, it is important that the veneer glued into his plywood is dried just right — *uniformly* — for its end use, and MOORE ROLLER VENEER DRYERS offer the *key* to "just right" drying for any mill.

MOORE ROLLER DRYERS ARE MADE FOR ALL DRYING REQUIREMENTS. CALL OR WRITE FOR DETAILS ABOUT DRYING EQUIPMENT FOR YOUR PLANT.

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BUILD YOUR LOG INVENTORY THE LAWRENCE WAY

Assure an adequate log supply for a continuous mill operation

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SCREENING for PARTICLE BOARD

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VIBRATING SCREENS

5' x 12'—TWO DECK ENCLOSED

The POSITIVE ECCENTRIC UNIT WITH STROKE ADJUSTMENT

Correct stroke length to particle length prevents upending with resultant blinding of the screen mesh.

Positive action 2-bearing design provides maximum capacity and efficiency. Oil splash lubrication.

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Continuous moisture detectors for maximum quality control

Laucks Sentries measure and record moisture content by 100% scanning of every board. System offers positive control over critical moisture factors affecting dimensional stability, machinability and finished appearance. Time lag is eliminated and any trends toward out: of: control production are sensed immediately. Permanent production profile is obtained through the use of a continuous strip chart recorder. Sentries ranging from single level marking units to multi-level marking, recording and counting systems are also available for plywood, lumber, and various construction boards. Write for full information.

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Armstrong to Boost Fiberboard Output

Armstrong Cork Co. is expanding production facilities at Macon, Ga., and Pensacola, Fla., according to H. R. Peck, vice-president and general manager of building materials operation.

At Macon, a new fabrication plant will be added to provide space for additional fabricating equipment used in manufacture of the company's line of wood fiber acoustical ceiling materials. Completion is expected in mid-1960.

At Pensacola, manufacturing space will be increased by 21% and additional fabricating equipment will be added. Completion is expected early in 1960.

•

Alder-Cedar Board Plant Set for Sweet Home, Ore.

Mel Lester, owner of the Lester Shingle Co. in Sweet Home, Ore., has started construction of a flakeboard plant near his present mill. The installation, engineered by Industrial Development Co., Inc., Tacoma, Wash., will have a capacity of 75 tons a day, using cedar residue from the Lester and the Three Pack Shingle mills, and alder purchased on the open market.

The Cedawood panels produced will be 68x122 inches in thicknesses of ¼ to 1 inch. Sales will be handled exclusively by Columbia Hardbord Co., Seattle, Wash.

The Columbia hot press and American Manufacturing chargers have been ordered. Production is expected early in 1960.

Columbia Hardbord Co., which has a similar plant in Everett, Wash., producing Cedawood, recently went on a seven-day week to meet a heavy demand for its output.

•

Astoria Plywood Plans Major Expansion

Astoria Plywood Corp., Astoria, Ore., has announced a $1,250,000 expansion and employe retirement program.

Fred Peirson, general manager, says the following plant work will be undertaken:

- An enlarged log pond.
- New hydraulic barker similar to that used in the pulp industry.
- Charger.
- 6-deck automatically fed Moore dryer.
- 24-open hot press.
- Three Raimann patching machines.
- New chipper plant.
- New boiler.

The expansion will result in a production increase from 4 million to over 7 million square feet a month. The expansion work will be completed early in 1960.

A profit sharing trust fund will be established under which employes will receive a portion of the profits before taxes. Funds will be held in trust for delivery to employes upon retirement or disability, or both.

Upon terminating his employment after 10 years with the company, an employe will receive full payment of his share of the fund.

The plan is new to the plywood industry but has been in operation for many years in such organizations as Sears-Roebuck and J. C. Penney Co.

Subject to approval of various details by the Treasury Department, it is also planned to enter into a group insurance plan that will assure a retiring employe over 65 years of age an income of up to $150 a month.

•

New York Post Filled

Georgia-Pacific Corp. has named Robert L. Larson assistant manager of its hardwood veneer plant in McKeever, N. Y. He was formerly with the firm's Toledo, Ore., plywood division. Mr. Larson has been with G-P since 1955.

Board Plant Considered For Central Oregon

Floyd Rapp, one of the organizers of the Brownsville Particle Board & Associated Products, Inc., plant in Brownsville, Ore., has been conferring with business men in the Redmond, Ore., area, concerning establishment of a particle board plant in the area.

Mr. Rapp reports that a survey shows mill residue, packpine and similar material available in a 33-mile radius of Redmond would provide 1500 tons of material a day, sufficient to operate a particle board or other type pressed board plant. He estimates an investment of from $700,000 to $800,000 would be required.

•

New Hampshire Firm Promotes Bruno

Victor Bruno, formerly assistant to the general manager of Plywood Products, Inc., North Stratford, N. H., has been elected vice-president of the plywood and veneer firm. Mr Bruno has been in the plywood business since 1945. In 1951, together with Allie E. Salls and Rueben Washburn, he formed Plywood Products which became a subsidiary of Brown Company, Berlin, N. H., in 1956.

ALL MUSCLE — NO FAT!

BROOK NEMA RERATE, TOTALLY ENCLOSED, FAN COOLED A.C. MOTORS

Take less space, weigh less, smaller frames than the Brook standard totally enclosed fan cooled motors—yet, performance is equal. 1 to 40 HP*. Built to N.E.M.A. specifications for rerated motors. Same resistance to dust, fumes and moisture as the larger, heavier, standard frame t.e.f.c. motors. Maximum economy and lower first cost because of Brook modern production techniques and world-wide volume distribution. Warehouses, Sales Representatives, and Dealers throughout the country. Write for literature.

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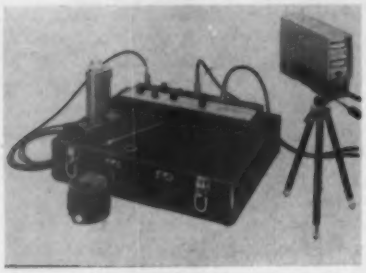

Portable Rig Spots Machinery Vibration

Stewart-Warner Corp., Chicago, Ill., has developed a portable balancer adjustable to any job from below 10 millionths of an inch to over 1/10 to ⅛ inch amplitude of vibration.

The unit will analyze vibration in such machinery as grinding wheels and cutter head for finer finishers and closer tolerance work. It quickly detects vibration caused by worn bearings, belts and misalignment.

In operation, amplitude of vibrations of parts under test are electromagnetically converted into electrical impulses. These impulses are amplified into the electronic unit which triggers a strobe light to "freeze" the image of the rotating part, pin-pointing the trouble source.

The stroboscopic unit and meter are mounted together in the portable head to allow reading the meter and strobe simulatneously.

•

"Wing Knee" Replaces Extra Headblocks

A retractable "Wing Knee" has been developed by Mater Machine Works, Inc., Corvallis, Ore., to replace additional headblocks and knees required for lumber and timber bound cants. An advantage of the unit is that it can be readily retracted out of the way by the sawyer.

The rig is particularly adaptable to sawing crooked logs with knots, or in taper sawing.

Garnet Mineral Extends Life of Sandpaper

Minnesota Mining and Manufacturing Co., St. Paul, Minn., is producing a new garnet sandpaper which it says lasts from two to seven times as long as ordinary garnet products. It is specially designed for high pressure sanding application.

Designated "RN" Garnet, the product is bonded with a company-developed resin which is stronger, more flexible and more heat resistant, the firm points out. The resin also promotes more consistent cut throughout the life of the coated abrasive which results in more uniform production.

The material is well suited for open drum, edge sanding, molding sanding, multiple drum, spindle sanding and pneumatic drum sanding operations.

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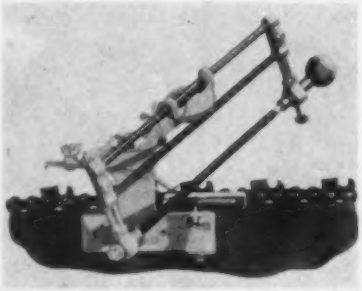

Chisel Bit Chain Saw Sharpener

A new chain saw sharpener for chisel bit chain has been developed by Hygran Industries, Ltd., Richmond, Calif.

The unit clamps on the saw bar with position, height, tilt and angle controled by a dial. The sharpener has rotating file holding bushings which allow full file adjustment to any desired hook, and 9-inch slide rods for a 7-inch stroke.

The model also has a chamfered T-bar and a reverse bend cutting positioner for sharpening short cutters.

Sawyer Control Requires Little Floor Space

Sel-Set Machinery Corp., Salem, Ore., has developed a compact Select-O-Matic for mills where floor space is limited. It requires less than half the space of the M2LC model, retains all the M2LC features of predetermined electronic controls and simplicity of electronic design.

The new model has automatic presetting control for infinite settings enabling the sawyer to pre-set any backstand combination from 0 to 50 inches. The unit has taper pushbutton controls, offset override, dog override and system kill switch. It mounts on a 3-inch tubular pedestal base.

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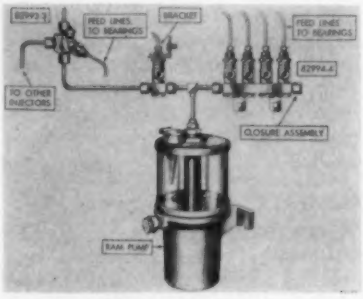


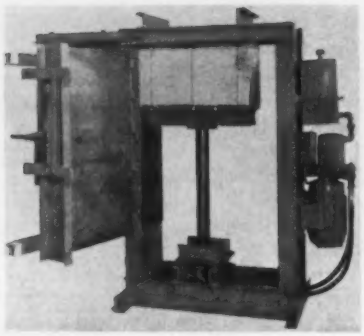
Automatic Lubrication For Machinery

Micro-Measure System is a miniaturized injector system for automatic lubrication of machinery in which fluid lubricants are pre-measured and injected in automatic cycles as often as every minute.

Manufacturer Lincoln Engineering Co., St. Louis, Mo., says the system will supply lubricants at a predetermined rate in quantities as small as 1/135 of a drop (200 millionths of an ounce).

There is no overflowing, no dripping.

NEW QUARTERS for Nielsen Saw & Manufacturing Co. in Eugene, Ore., were prompted by increasing demand for the firm's products. The new quarters houses more than 50 machines ranging in size from a 10-ton surface grinder to a number of very small, highly specialized instruments. Move to the larger quarters resulted from growing orders in three basic Nielsen grinders: Model 100B bench grinder for small shops; Model H, a production grinder; and Model 250 for circular and all types of saw chains. Nielsen continues its branch in Roseburg, Ore.



Smaller Size Press For Baling Shavings

Consolidated Baling Machine Co., Brooklyn, N. Y., has designed a new press for baling wood shavings into dense compact bales weighing from 60 to 100 pounds. It is an all-steel, hydraulic high pressure machine.

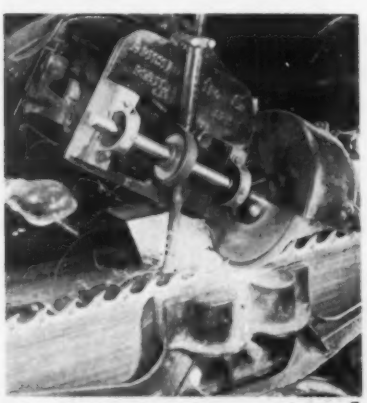
The new unit is designated the HUS-S Upstroke. The chamber measures 16x30 inches, 48 inches deep. The motor is a 5-hp unit; total force exerted is 15 tons.

•

Simonds Announces New Veneer Knife

The Royal Chinook, a new veneer knife from Simonds Saw & Steel Co., Fitchburg, Mass., was tested for two years before being put on the market.

The manufacturer says it offers extra sharpness, lasts longer and gives extra production of sound veneer. Other features pointed out by the manufacturer are extra resistance to nicking and the ability to cut through hard knots without dodging or breaking out and extra smooth cutting on hardwood or softwood, either hot or cold.



ARMSTRONG GRINDING MACHINE has been added by Disston division, H. K. Porter Co. for high-speed grinding of wide band saws. Disston says the new unit has reduced grinding time by 50%. The unit automatically indexes each tooth into proper position for the abrasive wheel to grind to proper shape.

NOXTANE Maintains Quality . . . Stops Sap Stain!

Noxtane kills fungi growth at the surface! Stops formation of blue-black stains that degrade lumber, eat up profits!

Easy to use! Just mix one 10-lb. bag with 100 gallons of water—can be used as a dip or spray. Dissolves quickly . . . penetrates fast . . . counteracts wood acids . . . resists leaching! Equally effective on pines *and* hardwoods.

Costs only a few cents per thousand feet—can save you thousands of dollars every year.

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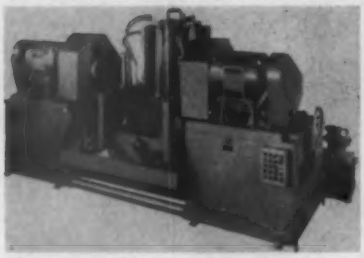

Timber Framer Dovetails, Slabs Heavy Timbers

Either rounds or cants can be fed into the Timber Framer, which double end trims, cuts sharp tenons and discharges at a rate of three pieces a minute.

Burke E. Porter Co., Grand Rapids, Mich., explains that stock conveyor-fed to the machine is automatically equalized both longitudinally and transversely, then rigidly clamped and carried vertically past the cut off and slab heads. If tenons are to be made, the carriage rotates 90 degrees and returns to down position. Clamps release and the piece is conveyed out of the machine.

A fully integrated, electrically-actuated hydraulic system controls all movements. The machine features inserted type carbide saws with hogging heads which reduce the scrap to usable chips. Equalizers insure centered tenons of equal length. Set up controls enable the operator to sequence movements from the pushbutton station.

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• Air-Mac, Inc., Portland, Ore., has been named Oregon distributor for Gerlinger lumber carriers. Previously the company distributed the carriers in Multnomah county areas only. The remainder of the state was serviced by the Gerlinger factory at Dallas, Ore.

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• Fred E. Barnett Co., Eureka and Ukiah, Calif., has been named a distributor for Western Gear Corp.'s StraitLine reducers and gearmotors, according to Ed Jenks, sales manager, Industrial products division, Western Gear in Belmont, Calif.

Arbor Motor Offered For Long Overhang

Mereen-Johnson Machine Co. has developed a saw arbor motor with extended end bell types for long overhangs without outboard bearing.

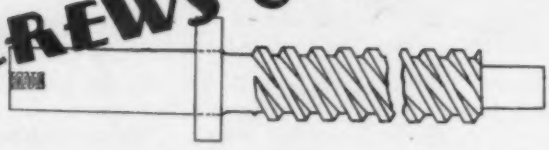
The 5⅛-inch diameter end bell extends 16 inches beyond the motor and the 2 3/16-inch diameter shaft as much as 30 inches further.

The new extended end bell type motor is one of many special and standard arbor motors manufactured by Mereen-Johnson.

•

• Chemical Process Co. has completed construction of a dry glue blending plant and warehouse at Redwood City, Calif. The plant is designed to process 5 million pounds annually of the company's line of DION soya-blood adhesive. Chemical Process Co. also manufactures ion exchange resins, polyester resins and resinous adhesives at Redwood City.

CARRIAGE SCREWS & NUTS



LOVSTED Carriage Screws are made from high carbon steel and can be furnished with acme, modified acme or square threads as preferred. All machining accurately done.

Our carriage nuts are cast of tough, long-wearing Gear Bronze and the internal threads cut as specified. To assure a perfect running fit of the nut on the screw both screw and nut should be made at the same time.

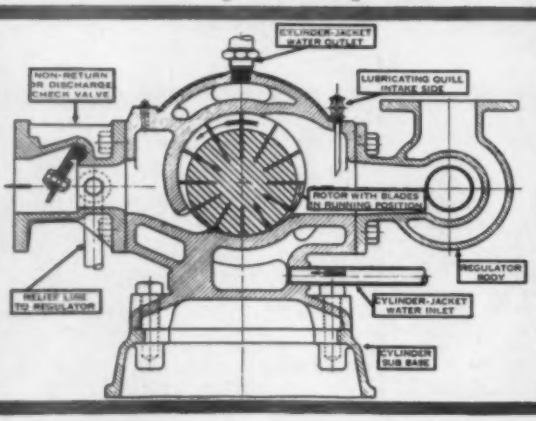
C. M. LOVSTED & CO., INC. · 4000 W. Marginal Way, Seattle 6, Wash.

Why Lumbermen Specify Fuller Rotary Compressors

1. Direct Drive
2. Blades Automatically Compensate For Wear
3. Simple Foundations

PLUS . . .

- Accessibility
- Low Maintenance
- Small Floor Space In Relation To Capacity



Fuller Rotary Compressors have extraordinary capacities in proportion to size, simple drives and remarkably few working parts. The absence of reciprocating motion results in both smooth air flow and vibration-free operation. For all of these reasons . . . Fuller Rotary Compressors are ideally suited for the lumber business. Write today for complete details.

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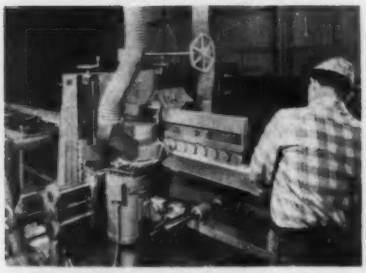
Machinery at Work



Edger Prepares Stock For Glue Joint Work

A dual head, straight line edger designed by Mereen-Johnson Machine Co., Minneapolis, Minn., will prepare glue joint work previously performed by straight line rip saws and moulders.

The unit has one movable and one fixed head, each powered by a 25-hp motor. It can handle random width stock, 2 to 12 inches, producing two straight, parallel edges in pieces up to 24 feet long. It has been used effectively on pieces 3 inches and less. Material can be solid or finger jointed.

The adjustable head is actuated by a hydraulic cylinder controlled by the operator.

The machine can turn out 275 feet a minute. It hogs residue for quick disposal instead of leaving sawed strips.

•

Dual Roll Sander Allows One-Pass Finishing

Design incorporating a finishing roll directly behind the main sanding roll makes one-pass finishing possible in the Dual Roll Speedbelt sander developed by Timesavers, Inc. The unit was designed for patch sanding of fir plywood but can be used on other types of wood and hardboard and particle board.

In patch sanding of fir plywood, the first sanding roll levels the patches while removing only a slight amount of the material for the entire sheet. As the panel moves through the machine, the entire surface receives a smoothing cut producing a fine finish. The method eliminates bright spots.

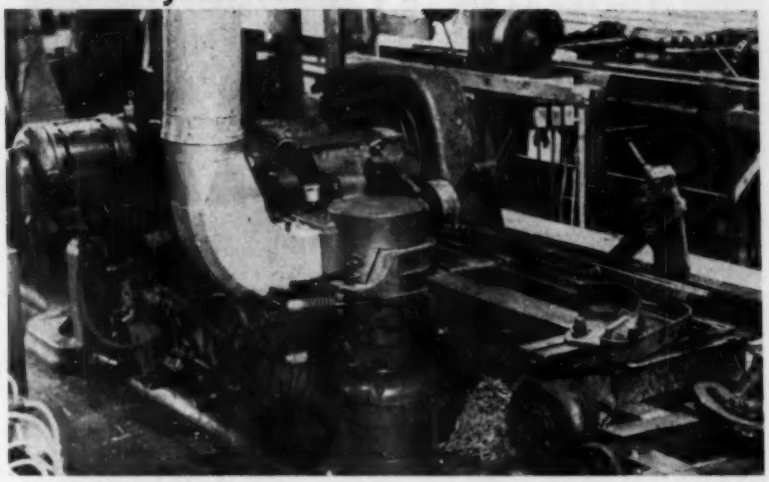
•

Distributor Named

Janette Electric Manufacturing Co., Morton Grove, Ill., has appointed Bearing Sales & Service, Portland, Ore., as distributor for its line of gearmotors and speed reducers. Bearing Sales will provide complete service in western Oregon and western Washington.

•

• Ohio Knife Co., manufacturer of knives for planers, hogs, veneer lathes and chippers, has appointed Pacific Saw & Knife Co., Portland, Ore., as a dealer for its complete line of knives.



STETSON-ROSS chip blanker at MacMillan & Bloedel, Ltd.'s Somass division at Port Alberni, B. C., is providing chips in the firm's planer operation. On an average daily production of 200,000 lineal feet, mostly 2-inch stock, 10.1 units of chips are being produced. This figures at .05 units of chips per 1000 lineal feet of 2-inch material processed. Some innovations in the machine include use of the climb milling technique —rotating the head in the direction of lumber travel to take chip-size bites and avoid excessive tearing, and the use of a variable frequency alternator to change the cutterhead rpm to produce higher quality chips. Extensive studies are being conducted on the performance of the unit by MacMillan & Bloedel and Stetson-Ross personnel.

INTERNATIONAL model VCO-190 tractor with 40-foot semi-trailer takes on a load of wood flour at Southern Pine Lumber Co., Diboll, Tex. This big unit is one of 200 units in the company's automotive fleet. The company moves most of its products by truck.

★ ★ ★

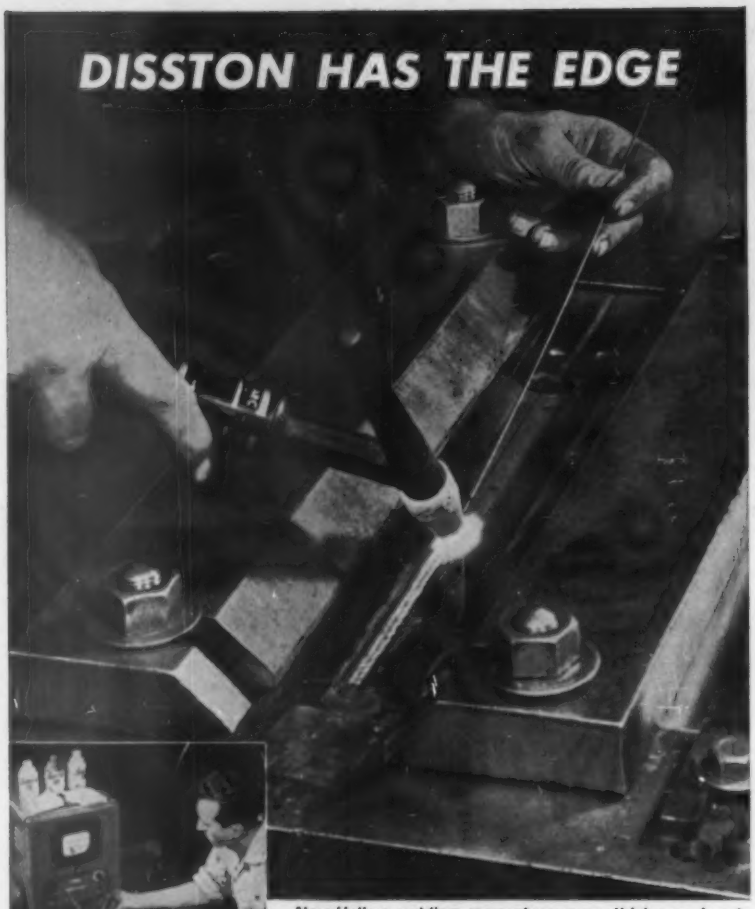
MODEL 12 PAYLOADER handles load of lumber estimated at from 2500 to 3000 board feet of uncured white pine at the Sincavage Lumber Co. in Blakeslee, Pa. The Hough unit is also used by the firm for yard maintenance, log and lumber transport in the yard and transport of other materials.

SUMNER IRON WORKS 66-inch, 8-knife horizontal feed chipper shown above, was recently installed at Lincoln Lumber Co., Lincoln, Wash. It is one of 25 Sumner chippers sold by the Everett, Wash., firm in the first four months of 1959. Dillon Supply Co., Raleigh, N. C., a Sumner distributor for less than a year, accounted for 10 of the sales in Virginia and North Carolina.

★ ★ ★

PROW carriage drive installed on the Monarch carriage of the Steve Wilson Lumber Co., Medford, Ore., is expected to increase production. The carriage, which formerly got 7 lines per minute, will average 12 with the new drive. Production will grow from 90,000 to over 100,000 a shift. The drive is rated at 100-hp and is set up to feed 480 feet per minute. Reverse speed is 800 feet per minute.

DISSTON HAS THE EDGE



New Heliarc welding guarantees even thickness bands with a minimum variation from the rest of the saw in the weld area . . . clean, dense, high quality welds with an absolute minimum of distortion.

Disston Wide Band Saws are all thoroughly checked by Sperry Reflectascope for internal imperfections and hairline cracks.

NEW HELIARC WELD strong as any part of the saw

Under normal operating conditions, barring accidents, Disston Wide Band Saws won't break at the weld. This we guarantee. The reason? New Heliarc welding. It's the greatest advance in welding in the last 20 years . . . making the capacity and efficiency of Disston Wide Band Saws more outstanding than ever. Ask your distributor to show you a sample, or write to *Disston Division, H. K. Porter Company, Inc., 264 Tacony, Philadelphia 35, Pa. In Canada, Box 530, Acton, Ont.*

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Yours for the Asking

UNITIZED PACKAGING. The 19th edition of "Better Ways to Package, Unitize and Ship" is available. The 48-page booklet also describes Signode's complete line of strapping, tools and equipment. Copies from Signode Steel Strapping Co., 2600 North Western Avenue, Chicago 47, Ill.

★ ★ ★

GEARMOTORS, MOTOGEARS AND FLUID DRIVES. A 48-page booklet describing the functions of these various types of drives and providing detailed selection data, dimension, overhung load ratings and mountings is available from Link-Belt Co., Dept. PR, Prudential Plaza, Chicago 1, Ill., ask for Book 2747.

★ ★ ★

DOOR INTERLOCK SWITCH. A specification sheet is available on the Subminiature door interlock switch which automatically cuts off the power circuit when the service door is opened to electronic cabinets. Copies from Micro Switch, a division of Minneapolis-Honeywell Regulator Co., Freeport, Ill.

★ ★ ★

AIR STARTING MOTORS. A 24-page bulletin containing case history on air starting motor installations, selection of proper air starting motors and detailed specifications and mounting-dimension diagrams is available from Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y., ask for Form 5094E.

★ ★ ★

STEEL, ALLOY PRODUCTS. Photos illustrating Columbia Steel Casting Co.'s range of manganese steel, carbon steel and alloy components for the forest products industry are contained in a bulletin now available from the firm at 933 N. W. Johnson St., Portland, Ore., ask for Bulletin No. 1064.

★ ★ ★

POWER TRANSMISSION MACHINERY. The Dodge line of power transmission machinery is discussed. Featured are Flexidyne dry fluid drives and Para-flex flexible cushion couplines. Copies from Dodge Manufacturing Corp., Mishawaka, Ind., ask for Bulletin A-706.

★ ★ ★

COMPRESSOR. The Joy compressor line is presented. Included are specification on eight sizes of the units in the 15 to 125 hp; 81 to 641 cfm range. Cross-section drawings help explain units. Copies from Joy Manufacturing Co., Oliver Building, Pittsburg 22, Pa., ask for Bulletin A-56.

★ ★ ★

PREFABRICATED DRY KILNS. Photographs of various sizes of prefabricated Moore kilns, including cross section line drawings, are contained in Bulletin 5905 now available from Moore Dry Kiln Co., North Portland, Ore.

★ ★ ★

CARBIDE TIPPED SAWS. How to select the proper type carbide saw for a particular use, a selection guide for proper diameters, number of teeth and saw speed and tips on care of carbide tipped saws are included in a catalog section now available from Disston division, H. K. Porter Co., Inc., Philadelphia 35, Pa.

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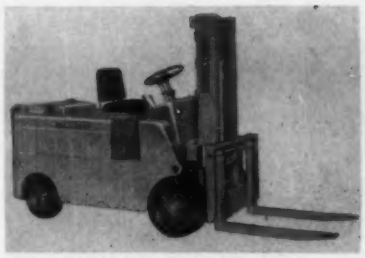

Heavy-Duty Lift Trucks Handles 3- to 6-Ton Loads

Towmotor Corporation has introduced the "Pace-Maker," a unit capable of loads from 3 to 6 tons. The unit is available in both cushion and pneumatic-tired models with a choice of five gasoline, LP-gas and diesel-powered models.

Cushion tired units include the Model 540 with 6000- to 7000-pound capacity, the Model 600 with 8000- to 9000-pound capacity and the Model 670 with 10,000 to 12,000-pound capacity.

Pneumatic models include the 680-P with 6000- to 8000-pound capacity and the 680-P Dual with dual drive wheels and specially designed to handle bulky 7000-pound loads.

A new feature is the lift truck carriage design which provides for simplified suspension of the forks from a horizontal support shaft on the lift truck.

•

• Prineville Machine & Supply Co., Inc., Prineville, Ore., has been appointed an industrial apparatus distributor for Westinghouse Electric Corp. The company will distribute motors, gearing, gearmotors and electrical controls primarily to its sawmill and lumber industry customers in Oregon counties of Crook, Grant, Wheeler, Deschutes, Jefferson, Morrow and Harney.

ACME CHAIN CO. officials from Holyoke, Mass., were recent visitors in Portland, Ore., to confer with officials of J. W. Minder Chain & Gear Co., new western dealer for Acme roller chain and sprockets. From left, Carl E. Johnson, president and Herman E. Pihl, treasurer of Acme. Minder headquarters are in Los Angeles. A branch is located in Portland, Ore.

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PERSONALITIES

MILLAN C. SHEVCHIK has been appointed plant superintendent of the new Disston division, H. K. Porter Co. plant under construction at Danville, Va. He has been purchasing agent at Disston since mid-1957.

IRVING KOSS is new manager of the Microwave department and Industrial Control products department of Motorola Communication and Industrial Electronics. He succeeds ROY H. OLSON who becomes manager of the Chicago military electronics center.

IRVING KOSS

J. M. MATUSZAK

JOHN M. MATUSZAK has been named chief engineer for Sel-Set Machinery Corp., Salem, Ore. He has eight years of experience in mechanical, electrical and industrial engineering in the machinery manufacturing field.

Several personnel changes are reported at Atkins Saw division, Borg-Warner Corp. BURLEIGH L. OWENS becomes manager of industrial sales. He is a 38-year veteran of the firm. DAVID W. DEWEY becomes eastern division manager, responsible for distributor sales in a 11-state area. WALLACE W. SKAGGS is new branch manager in Portland, Ore. and will supervise warehouses which service distributors and dealers in the northwest.

B. L. OWENS

E. L. HOLBROOK

EDWARD L. HOLBROOK has been named to head the eastern division of Modernair Corp. He will work in sales and in arranging for foreign licenses to manufacture and distribute Modernair's line of hydraulic and pneumatic products.

WTC Places Emphasis On Boards, Related Items

A top-level organizational change involving hardboard, particle board and allied special wood products was one of the highlights of the last year in Weyerhaeuser Timber Co. A new, large branch of company operations named the "Silvatek and New Products Group" was announced during the second half of 1958.

The group includes and supplants the company's former "Special Products Group" in order to improve Weyerhaeuser's position in increasingly competitive markets for wood products and special products.

Silvatek and New Products Group is responsible for all manufacturing, merchandising and marketing of special products. This includes plans for expansion into products, markets and industries where profitable growth can be achieved outside the traditional fields of lumber, plywood, pulp, paperboard and containers. The new group is supported by Central Research and Development, Longview.

John L. Aram, vice president, is in overall charge of the group, which consists of four functional departments, each with its own staff manager.

Robert D. Pauley occupies the dual positions of director of business development and assistant to Mr. Aram. His job: investigate new product opportunities and recommending for investment and commercialization those deemed most promising for the company's expansion program.

All former Weyerhaeuser Sales Co. customers for hardboard, particle board, Ply-Veneer, Silvacon and Silvacel are now served by the Silvatek Products Group.

San Diego Port Busy

Lumber shipments are moving into the Port of San Diego in California at a record rate. Officials estimate the port may handle 160 million feet during the year. Increases are also reported in volume of hardwood and softwood plywoods from the northwest.

•

Sales Post Filled

Stephen Simon has been named national sales director of the Industrial Plywood Co., Inc., Jamaica, N. Y. Mr. Simon comes to Industrial from Barclay Manufacturing Co., where he was general sales manager. He was formerly in the advertising agency business. Industrial Plywood Co. is expanding its merchandising program to a national basis. The firm last year set up a prefinishing plant subsidiary, Plywood Finishing Co., and now produces prefinished plywood wall board.

•

Research Lab Planned

United States Gypsum will build a research laboratory containing 100,000 square feet of floor space on a 10-acre site in Des Plaines, Ill. Completion is expected in the spring of 1960.

•

• W. H. Rhodes, formerly advertising manager of a British Columbia retail lumber organization, has been appointed information officer of the B. C. Lumber Manufacturers Association. He will assume the responsibilities of G. Cleve Edgett, formerly promotion director with BCLMA who recently was named executive director of the newly organized Canadian Wood Development Council.

G-P Appoints Lawson To California Post

Georgia-Pacific Corp. has named William E. Lawson general coordinator and advisor for its California redwood timber, production and sales operation.

G-P President Robert B. Pamplin said the growth of G-P in the redwood field has reached a point where it is desirable to add a coordinating authority.

Lawson was general manager of Holmes-Eureka Lumber Co. until its purchase by G-P in 1958. He was previously vice-president and general manager of the California operations of Simpson Redwood Co.

•

Weyerhaeuser Officers

Officers of Weyerhaeuser Timber Company were selected at the annual meeting of the firm's board of directors in Tacoma in May.

They are: F. K. Weyerhaeuser, Tacoma, president; Norton Clapp, Seattle, Wash., chairman of the board; Edmund Hayes, Portland, Ore., chairman of the executive committee; John L. Aram, W. P. Gullander, Howard W. Morgan, Bernard L. Orell, J. E. Nolan, George H. Weyerhaeuser, of Tacoma, and John M. Musser were reappointed vice presidents.

George S. Long, Jr., was named secretary, with H. E. Nelson treasurer, and Robert W. Boyd, controller.

•

• C. A. Mauk Lumber Co., Toledo, O., has added the Osmose Process for pressure-treating wood and will now make available treated lumber in job lots of all species, specifications and sizes.

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For jobs that demand *real* power, *this* is the motor—Evinrude's great "Four-Fifty." New, compact V-4 design. 70.7 cu. in. displacement. Delivers 50 solid b.h.p. at 4500 r.p.m.—easily, quietly, smoothly—in toughest day-in, day-out service. See your Evinrude dealer — he's listed under "Outboard Motors" in the yellow pages. Evinrude Motors, 4150 N. 27th Street, Milwaukee 16, Wis. *A Division of Outboard Marine Corporation. In Canada: Mfd. by Evinrude Motors, Peterborough.*

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Millmen Should Consider Radio in Their Plants

Have you overlooked the use of radio in your plant? Most utilization of the air waves to date in the forest industries has been in the woods. However, there is a great potential use for radio in plants.

"Radio is a wonderful tool to aid in regular operations, in transportation and in emergencies," stated Robert Olin, chairman of the Forest Industries Radio Council. "The FIRC is volunteering to help the lumber industry get started in the 'Manufacturers Radio Service' and to help adapt radio to the plant.

"Persons interested in more information are urged to write Elmer Surdam, FIRC, Box 5153, Eugene, Ore."

•

Albama Meeting Considers More Use of Residues

Emphasis was on increased use of sawmill residue for pulp chips at a sawmill conference conducted at Cullman, Ala. under sponsorship of C. Arnold & Son, Inc., the Alabama Department of Conservation, division of forestry; Alabama Forest Products Association and the TVA division of forestry relations.

John W. Lehman, chief of the utilization section of TVA, suggested that the sawmill operators might install debarking and chipping equipment so as to more profitably utilize low-grade logs and sawmill waste.

Ernest Clevenger, vice-president of Corley Manufacturing Co., reported a rapid trend away from small, highly portable sawmills toward larger stationary mills incorporating labor-saving devices and residue utilization equipment.

Mr. Clevenger sees the sawmill of the future as a highly mechanized and automated plant producing 25,000 to 30,000 board feet of lumber and 30 to 35 tons of chips a day with a crew of six men.

•

Wholesalers Schedule Lumber Selling Course

The National-American Wholesale Lumber Association has launched a national lumber training program . . . "How to Sell More Lumber Profitably" . . . it was reported at the annual meeting of the group in Washington, D. C.

The program is under the direction of Sidney Edlund, New York, a specialist in the field. The course will be open to non-member lumber manufacturers, wholesalers and commission men as well as National-American members.

Supplementing the correspondence features of the course will be four seminars scheduled in each of nine cities coast to coast, making a total of 36 seminars starting in September and ending in May, 1960.

Further information is available from the National-American office, 3 East 44th Street, New York 17, N. Y.

At the annual meeting J. Ward Allen, Vancouver, B. C., was elected president, succeeding Donald R. Meredith, Madison, Conn. J. Alex McMillan, Charlotte, N. C., is first vice-president and L. J. Fitzpatrick, Madison, Wis., is second vice-president.

Gordon A. Atwater, New York, was named executive vice-president effective August 15. He succeeds Sid L. Darling who retires on that date after almost 29 years of continuous service. Mr. Darling will continue with the association in an advisory capacity.

•

Insular Philippine Post Goes to R. S Kearns

Harvey C. Pope, veteran general manager for Insular Lumber Co. in the Philippines is retiring after 32 years with the firm and will be succeeded by R. S. Kearns, most recently general manager of the Dwyer Lumber Co., Portland, Ore.

Kearns has a varied industry background. He has served as vice-president in charge of operation and general manager of Winton Lumber Co., Martell, Calif., taught at Oregon State College and has worked as a consulting forester with Mason, Bruce & Girard in Portland, Ore.

Major Northwest Firms Negotiating Merger

Stock exchange to merge Valsetz Lumber Co. and Herbert A. Templeton Lumber Co., both Portland, Ore., into Boise Cascade Corp., Boise, Ida., has been approved by stockholders of the two firms.

Under the merger plan, Valsetz and Templeton will retain their individual corporation entities and become subsidiaries of Boise Cascade. Both Herbert A. Templeton and Robert V. Hansberger, president of B-C, emphasize that management and personnel of Valsets and Templeton will contine as in the past.

Valsetz operates sawmills at La Grande, Elgin, Enterprise and Joseph, Ore., and Lincoln, Wash., and a new plywood mill at Valsetz, Ore. Herbert A. Templeton Lumber Co. distributes throughout the nation plywood, lumber and millwork products produced by Valsetz and other sawmills.

Boise Cascade operates sawmills in south central Washington and southern Idaho, a material retail division, a building materials wholesale Co., and recently started production of pulp and paper at a mill in Wallula, Wash.

Both Mr. Templeton and Mr. Hansberger stress the objective of the merger is to improve the positions of the companies in utilization and distribution of products from their forest resources.

•

U. S. Plywood Purchases Booth-Kelly Holdings

The estimated $50 million plant and timber holdings of Booth-Kelly Co., Springfield, Ore., is being purchased by U. S. Plywood Corp.

Included in the transaction, which has been approved by company directors and waits only stockholder approval, is a mill producing 200,000 feet per shift and about 3 billion feet of timber located on 142,000 acres.

Georgia-Pacific Corp. reportedly was also negotiating for purchase of the facilities.

•

Research Lab Scheduled

A contract has been awarded for construction of a forest products laboratory at Grand Rapids, Minn., according to M. B. Dickerman, director of the U. S. Lake States Forest Experiment Station. The building will be located on the campus of the North Central School of Agriculture and Experiment Station of the University of Minnesota. Construction will utilize laminated wood beams, and native hardwood plywood panels. Occupancy is anticipated within a year.

ATTENTION

Fir Plywood and Veneer Mills

One of the oldest and well established independent distributors with warehouses and offices throughout the 48 states, interested in consummating arrangements whereby they will be assured of constant source of supply. Well experienced staff to relieve the mill of all sales and credit responsibility on portion arranged for or the mills entire production output. Relieving the mill of vast sums of money invested in finished materials. Financial assistance available under proper circumstances and with adequate security. Usual contractual discounts expected. All replies will be handled with the strictest of confidence.

Write TL, Box 381, c/o The Lumberman, 731 S.W. Oak Street, Portland 5, Oregon.

PFI Officers Re-Elected; Product Marriages Eyed

Company officers of Potlatch Forests, Inc., were re-elected at a meeting of stockholders and directors. They include Robert E. Bundy, president and general manager; E. C. Rettig, executive vice-president; V. V. Vallandigham, vice-president of pulp, paper and converting operations; C. J. Hopkins, secretary.

Robert Olin, director of planning, predicts that in the future the industry will combine wood with other materials to afford much greater utilization of wood.

Mr. Bundy said the company has been able to retire debt contracted last year much ahead of schedule because of stepped-up business in converting paper. The debt was incurred to purchase Bradley Lumber Co. at Warren, Ark. This purchase, along with that of Southern Lumber Co., provides a foundation for the later establishment of the paper plant in the area, Mr. Bundy said.

•

Firm Utilizes Bark In Fertilizer Product

Pope & Talbot, Inc., St. Helens, Ore., is producing a bark-base fertilizer in a pilot plant operation.

The fertilizer consists of 60% ground bark, 40% peat moss and amonium sulphate and iron sulphate.

The firm anticipates a plant producing about 200 sacks a day with one man.

•

California Operator Buys Idaho Mill

W. I. Moffett has sold the Inyo Lumber Co. at Bishop, Calif., and purchased the Price Valley Lumber Co. at Tamarack, Ida., which he will operate as Price Valley Timber, Inc.

Price Valley is a band operation including kilns and planer. Mr. Moffett plans to install an Irvington end painter and waxer. The plant operates on federal timber, cutting ponderosa pine, Douglas fir, larch, white fir and Engelmann spruce. Entire output is dried.

Lew Snodgrass, with Mr. Moffett for many years, will be resident manager.

Mr. Moffett sold Inyo Lumber to Baugh Brothers Co., Los Angeles, a wholesale distributor firm.

•

• Hirt and Wood Lumber Co., Inc., Eugene, Ore., has named John Elder manager of its wholesale department. Mr. Elder has 10 years' experience in lumber, working with Georgia-Pacific Co. and Weyerhaeuser Timber Co.

BUYERS' GUIDE MEMO

Here's The Market Place To Buy or Sell

USED MACHINERY

✓ Take inventory of your planing mill . . . cut up plant . . . look over your molding plant . . . finishing room . . . do you have any idle or used woodworking machines to sell? The place to find a buyer is through THE LUMBERMAN'S Buyers' Guide section. Someone needs what you no longer find useful. He reads THE LUMBERMAN.

✓ Are you remodeling your headrig . . . revamping the green end . . . log deck? Don't discard the components you are replacing. Advertise them in THE LUMBERMAN. The cost is low and you stand a good chance of finding a buyer immediately.

✓ Need a job? Have you reached the top in your present position and want to put your experience to more profitable employment? Use THE LUMBERMAN'S Classified department. You might be just the man one of our readis looking for.

✓ The low cost way to advertise to the market of lumber manufacturers . . . plywood producers . . . remanufacturers . . . board manufacturers . . . and other wood producers is the Buyers' Guide of THE LUMBERMAN. It's a natural meeting place of buyer and seller **where sales are made!**

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1 to 44 inches per year	$12.00 per column inch
45 to 89 inches per year	10.75 per column inch
90 to 179 inches per year	9.50 per column inch
180 to 359 inches per year	8.50 per column inch
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No agency discounts on Classified or Buyers' Guide space

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All cards set in uniform style—⅞" deep by 2¼" wide. $10.00 per column inch. Special rate: $100 for 13 one-inch card insertions if paid in advance, to run within 52-week period, without copy change.

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the next issue is August, closing July 6th

THE Lumberman

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Simonds Abrasive Co., Philadelphia, Pa.

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American-Marietta Co., Seattle, Portland, New Westminster, B. C.
Borden Co., Chemical Division, New York City, Seattle
Monsanto Chemical Co., St. Louis, Mo.; Springfield, Mass.; Seattle, Wash.; Santa Clara, Cal.
Quaker Oats Co., Chemical Division, Chicago, Ill.
Reichhold Chemicals, Inc., White Plains, N. Y.; Seattle; San Francisco; Port Moody, B. C.

AIR COMPRESSORS—AIR TOOLS
Gardner-Denver Co., Quincy, Ill.; Seattle; Portland; San Francisco; Denver, Colo.; Dallas, Texas
Portland Machinery Co., Portland, Ore.

AIR CYLINDERS & VALVES
Bobbs Air-Draulics, Inc., Ray, Portland, Ore.

AIR MOTORS
Gardner-Denver Co., Quincy, Ill.; Seattle; Portland; San Francisco; Denver, Colo.; Dallas, Texas
Salem Equipment & Supply Co., Salem, Ore.

APPRAISALS
Caldwell Machinery Co., Portland, Ore.
General Appraisal Co., Seattle; Portland; San Francisco; Los Angeles; Spokane, Wash.; Vancouver, B. C.

AUTOMATIC SETWORKS
See "Setworks, Automatic"

AXLES
Axle Division, Eaton Mfg. Co., Cleveland, O.
Rockwell-Standard Corp., Transmission Axle Division, Detroit, Mich.

BALING PRESSES
Consolidated Baling Machine Co., Brooklyn 15, New York

BARKERS
Ederer Engineering Co., Seattle, Wash.
Filer & Stowell Co., Milwaukee; Portland
L-M Equipment Co., Portland, Oregon
Nicholson Mfg. Co., Auburn, Wash.
E. V. Prentice Co., Portland, Ore.
Sumner Iron Works, Everett, Wash.; Vancouver, B. C.
Soderhamn Machine Mfg. Co., Talledega, Ala.; Portland, Oregon

BEARINGS
Bearing Sales & Service, Inc., Portland, Ore., Seattle, Wash.
Dodge Manufacturing Corp., Mishawaka, Ind.
Link-Belt Co., Seattle; Portland; San Francisco
Schafer Bearing Div., Chain Belt Co., Downers Grove, Ill.
Timken Roller Bearing Co., Canton, Ohio

BELTING and PACKING, Belt Accessories
B. F. Goodrich Co., Akron, Ohio; Portland; Seattle
Goodyear Tire & Rubber Co., Akron, Ohio; Portland; Seattle
Manhattan Rubber Div., Raybestos-Manhattan, Passaic, N. J.
Scougal Rubber Mfg. Co., Seattle, Wash.
Mechanical Rubber Goods Div.—U. S. Rubber Co., New York City, N. Y.; Atlanta, Ga.; Portland; San Francisco

BITS and SHANKS
E. C. Atkins Div. of Borg-Warner, Indianapolis, Ind.
R. Hoe & Co., New York; Portland; Birmingham, Ala.
Pacific Saw & Knife Co., Portland
Simonds Saw & Steel Co., Fitchburg, Mass.; Portland

BLOWPIPE SYSTEMS
American Sheet Metal Works, Inc., Portland
Anderson Blowpipe & Mfg. Co., Seattle, Wash.
Archer Blower & Pipe Co., Portland, Ore., and Seattle, Wash.
California Blowpipe & Steel Co., Inc., Escalon, Calif.
Conveyair Company Ltd., Vancouver, B. C.
Medford Blowpipe Co., Medford, Ore.
Rader Pneumatics, Inc., Portland; Vancouver, B. C.

BOILERS
F. E. Balden, Portland
Seattle Boiler Works, Seattle, Wash.

BOOM and Tug BOATS
L. S. Baier and Associates, Portland
Nichols Boat Works Co., Hood River, Ore.

BRAKE BLOCKS, LININGS, DRUMS
Champion Friction Co., Eugene, Ore.
Raybestos-Manhattan Corp., Grey-Rock Div., Manheim, Pa.
World Bestos Corp., New Castle, Ind.

BRIQUETTE MACHINERY
Sumner Iron Works, Everett, Wash.

BURNERS—REFUSE
California Blowpipe & Steel Co., Inc., Escalon, Calif.
Medford Blow Pipe Co., Inc., Medford, Ore.

CARRIAGES—Riderless—automatic
The Enterprise Co., Columbiana, Ohio
Mater Machine Works, Corvallis
Mill Equipment, Inc., Seattle
Sel-Set Machinery Corp., Salem, Ore.

CARRIAGES
Albany Machine and Supply Co., Albany, Ore.
Corley Mfg. Co., Chattanooga; Portland
The Enterprise Co., Columbiana, Ohio
Filer & Stowell Mfg. Co., Milwaukee, Wis.
Klamath Iron Works, Klamath Falls, Ore.

Klamath Machine & Locomotive Works, Klamath Falls, Ore.
Klamath Machinery Co., Klamath Falls, Ore.
Mater Machine Works, Corvallis, Ore.
Mill Equipment, Inc., Seattle
Prineville Machinery and Supply Co., Prineville, Ore.
Sel-Set Machinery Corp., Salem, Ore.

CARRIERS (also see Lift Trucks)
Gerlinger Carrier Company, Dallas, Ore.
Hyster Company, Portland; Seattle
Towmotor Corporation, Cleveland, Ohio

CASTINGS, Iron, Steel, Brass
Electric Steel Foundry Co., Portland; Seattle; San Francisco; Houston, Texas; Spokane, Wash.; Eugene, Ore.
Filer & Stowell Mfg. Co., Milwaukee, Wis.
Klamath Iron Works, Klamath Falls, Ore.
Klamath Machinery & Locomotive Works, Klamath Falls, Ore.
Link-Belt Co., Seattle; Portland; San Francisco
Western Steel Foundry Co., Seattle; Portland

CHAIN, Log Haul
Portland Chain Mfg. Co., Portland

CHAIN, Steel Roller and Malleable
Chain Belt Co., Milwaukee, Wis.; Seattle; Portland; San Francisco; Vancouver, B. C.
Jeffrey Mfg. Co., Columbus, Ohio; Seattle; Portland
Link-Belt Co., Chicago; Seattle; Portland; San Francisco
Moline Malleable Iron Co., St. Charles, Ill.; Portland; Tacoma
Portland Chain Mfg. Co., Portland; Seattle; Bellingham

CHIP HANDLING Equipment
American Sheet Metal Works, Portland, Ore.
Archer Blower & Pipe Co., Seattle and Portland
Conveyair Co., Ltd., Vancouver, B. C.
Medford Blowpipe Co., Medford, Ore.
Rader Pneumatics, Inc., Portland; Vancouver, B. C.

CHIPPERS
Carthage Machine Co., Carthage, N. Y.
Filer & Stowell Co., Milwaukee; Portland
Goodman Mfg. Co., Chicago; Portland.
D. J. Murray Co., Wausau, Wis.
Soderhamn Machine Mfg. Co., Portland, Ore.; Talladega, Ala.
Sumner Iron Works, Everett, Wash.

CHIP SCREENS
Carthage Machine Company, Carthage, N. Y.
Link-Belt Co., Chicago, Seattle, Portland and San Francisco
Soderhamn Machine Mfg. Co., Portland, Ore.

CHROME APPLICATION
California Plating Works, Inc., Portland, Ore.

CLUTCHES
Dodge Manufacturing Corp., Mishawaka, Ind.

CONTROLS (air, hydraulic, electric)
Industrial Components, Inc., Portland, Oregon
Republic Electric & Development Co., Seattle
Valvair Corp., Akron, Ohio; Birmingham, Ala.; Seattle; Portland; San Francisco; Denver; Vancouver, B. C.

CONVEYORS
American Sheet Metal Works, Inc., Portland
Chain Belt Co., Milwaukee, Wis.; Seattle; Portland; San Francisco; Vancouver, B. C.
Electric Steel Foundry Co., Portland; Seattle, Spokane
The Enterprise Co., Columbiana, Ohio
Jeffery Mfg. Co., Columbus, Ohio
Link-Belt Co., Chicago; Seattle; Portland; San Francisco
Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N. J.

CORROSION RESISTANCE
California Plating Works, Inc., Portland, Ore.

COUPLINGS (also see hose and couplings)
Falk Corp., Milwaukee, Wis.

CRANES, Overhead
Ederer Engineering Co., Seattle
Harnischfeger Corp., Milwaukee, Wis.

CRANES, Truck, Wagon
American Hoist & Derrick Co., St. Paul, Minn.
Baldwin-Lima-Hamilton Corp., Lima, Ohio
Bucyrus-Erie Co., South Milwaukee, Wis.
Harnischfeger Corp, Milwaukee, Wis.
Insley Manufacturing Co., Indianapolis, Ind.
Koehring Co., Milwaukee, Wis.
R. G. LeTourneau, Lonview, Tex.
Link-Belt Speeder Corp., Chicago, Ill.
Marion Power Shovel Co., Marion, Ohio
Northwest Engineering Co., Chicago, Ill.
Skagit Steel & Iron Works, Sedro-Woolley, Wash.
Thew Shovel Co., Lorain, Ohio
Washington Iron Works, Seattle, Wash.

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Jones & Orth Cutterhead Co., Seattle; Memphis, Tenn.

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Salem Equipment & Supply Co., Salem, Ore.

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L-M Equipment Co., Portland, Ore.
Schurman Machine Works, Woodland, Wash.
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DECK MACHINERY
Klamath Machinery Co., Klamath Falls, Ore.

DRIVES
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Republic Electric & Development Co., Seattle
Western Gear Corp., Lynwood, Calif.; San Francisco; Seattle; Portland; Spokane; Denver; Houston; Dallas, Texas

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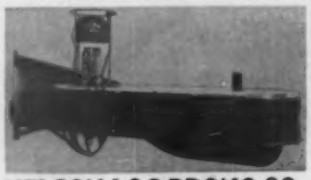

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Ford Motor Co., Dearborn, Mich.
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Selectric 10 hp, heavy duty setworks in action at Southwest Lumber Mill's Flagstaff, Arizona, operation.

Memo From:

SOUTHWEST LUMBER MILLS, INC.
FLAGSTAFF, ARIZONA

To: Mill Equipment, Inc.

Gentlemen:

We started investigating automatic setworks in 1955. We talked with manufacturers and users. Mills were visited and sawyers and millwrights consulted as to the operating and maintenance characteristics of each.

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We felt that Selectric offered the most dependable, proven setworks at the time of our purchase. There has been no reason for us to regret this choice.

Paragraphs above are excerpts from a letter signed by A. C. Hunt, Plant Manager, Southwest Lumber Mills, Inc., Flagstaff, Ariz.

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Timberman's Engineering Co., Portland, Ore.

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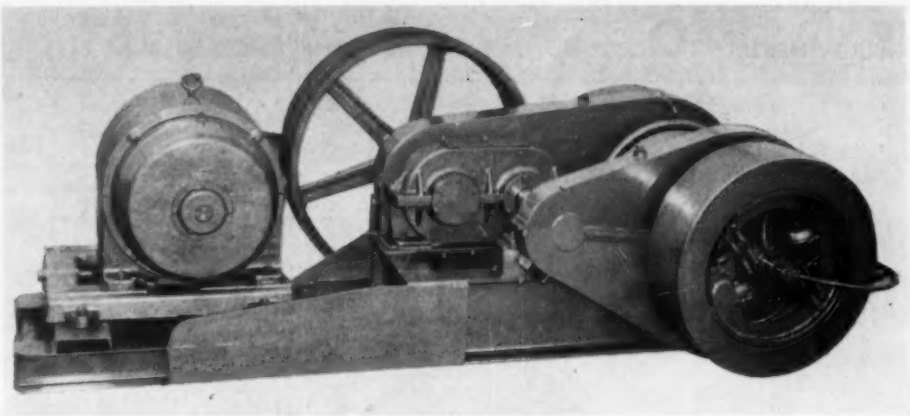

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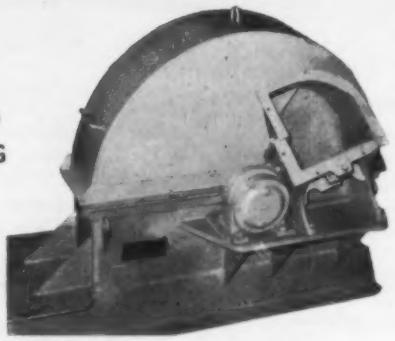

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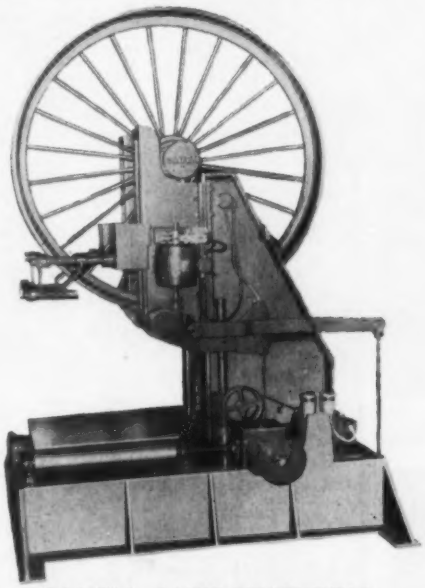

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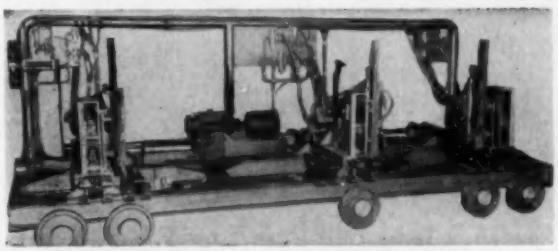

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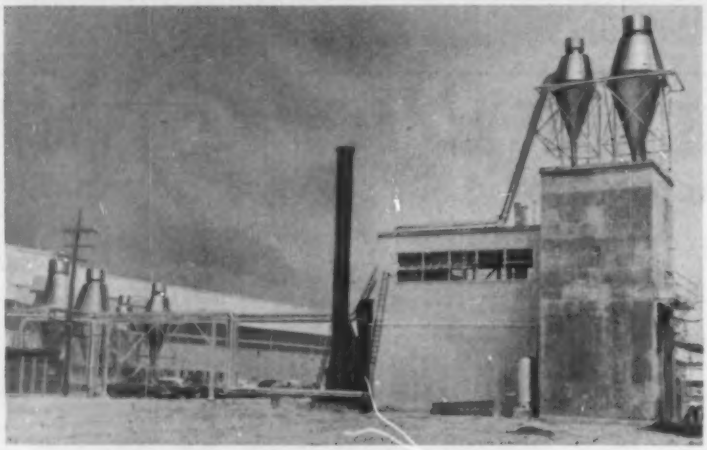

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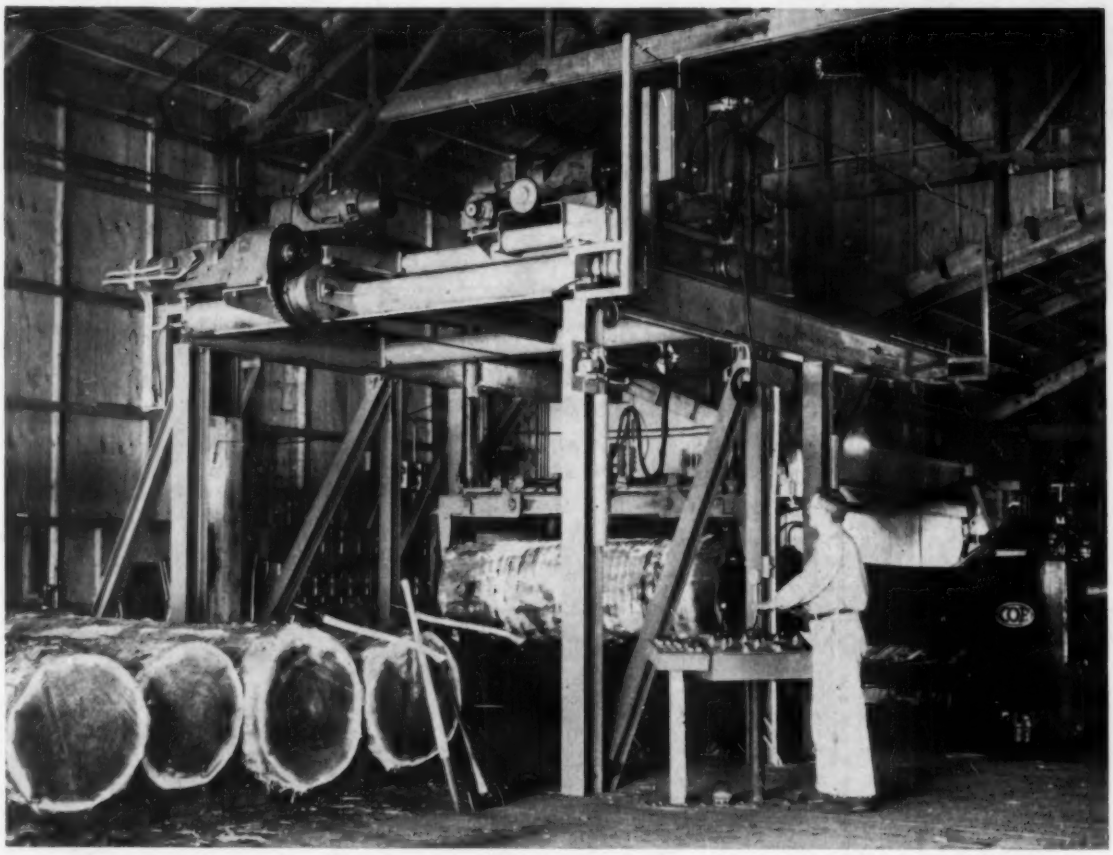

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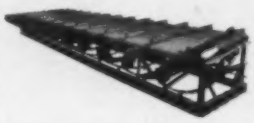

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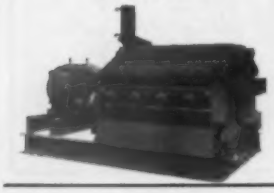

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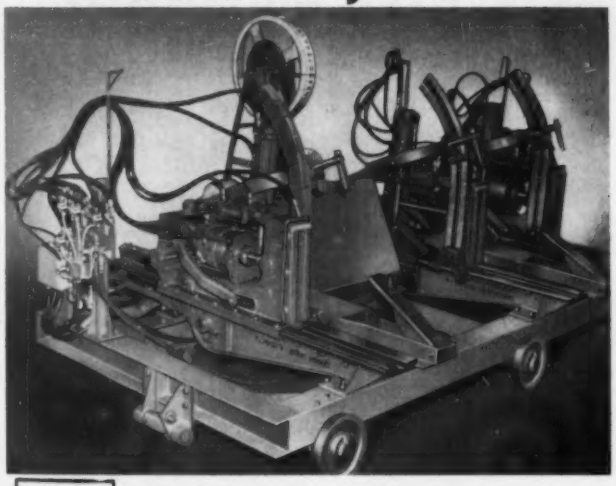

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Gang 26"x20" stroke, "Record"
Edger 10x60 Phoenix, ball bearing
Slasher, 5 saw, 4' spacing
14"x18" steam feed engine geared

Chain

400'—H74 with trimmer attach.
300'—H78 slasher
500'—H131 camel back
600'—H122 box
800'—H82 malleable
360'—1⅛x6 with 20" Moline flights

Filing Equipment

#150 L Covel bandsaw grinder with 72" clamp
#810 Covel 9" stretcher rolls
16x48x5 chilled anvil
14x36x5¼ chilled anvil
14x30x5 soft face anvil
12x48x5 soft anvil
12x27x6 chilled anvil
12x24x5¼ soft anvil
12x16x5 chilled anvil
10x12x4 chilled anvil
10x12x5 chilled anvil
84" Blackmer gummer
Covel edger gummer

CHIP MILL

Chipper, 72"—10 knife Carthage with 400 HP, 300 RPM 2300 V. Synch. Motor
5—Byron Jackson high pressure pumps 500 GPM, 2500' head
4—500 HP, 3600 RPM, 2200 V motors

Roll Cases

Steel frames, Roller chain driven
6—10x24x2 7/16"—1½" P
5—10x30x2 7/16"—1½" P
6—10x30x2 7/16"—1½" P
7—10x60x2 7/16"—1½" P
15—6x20x1 15/16—1¼" P
10—6x20x2 3/16—¼" P Concave

Blower Fans

28"x8" wheel dir. con. to 15 HP 440V motor
30"x8" wheel dir. con. to 10 HP 440 V motor
26"x12" wheel belted on ball bearings
30"x12" wheel belted on babbitted bearings

Misc.

Band Rip Saw, Yates R4—54"
Worthington Twin Horiz. 2 stage, 393 cu. ft. Air compressor
IR 315 CFD air compressor, 75 HP motor 440 V
IR 12x10 ER1 Air Compressor
#94 Berlin 6 knife planer 6x9
#404B Woods 6 knife planer 6x15
#207 Madison rip saw
Master S & W dragsaw, 20 HP motor
Lincoln 300 Amp gas driven welder
Ray Burner 400 HP turbine driven
2 Irvington Trim Saws #26, 3 HP Mtr., ¾ HP swing motor

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GOLDSTEIN & BLOCH

SAW MILL MACHINERY

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Gardner Denver Compressors • Air Trac Drills
Pneumatic Tools • Drill Steel
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Wincharger Light Plants
McKiernan Terry Pile Driving Equipment
Flygt Pumps • Hiab Cranes • Wire Rope
U S Rubber Hose and Belting
Ball & Roller Bearings • V Belt & Chain Drives

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The Lumberman's Classified Advertising Section

For Sale

PLYWOOD SANDER

(Due to Closing of Millwork Plant)

49" YATES 8-drum, direct motor drive ea. drum, complete with electric switches, starters, blowpipe, hoods.

Real accurate machine.

BURKE MILLWORK COMPANY
P. O. Box 1844
Seattle 11, Washington
MElrose 2-0124 CHerry 2-2902

WANTED

BAND RESAW—Used, 54 or 60". Prefer complete unit, filing room equipment, motor, starter, disconnect, etc. Describe, price, location, etc.

**R. C. OWEN COMPANY,
HAZLEHURST, MISSISSIPPI**

POSITION WANTED—EXPERIENCED

Planerman — Belt & Electric Machines — Grind Room, etc. Wishes steady location — go anywhere — non drinker — reliable.

**Write TL Box 394, c/o THE LUMBERMAN,
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PLYWOOD PRODUCTION MANAGER

Experienced plywood production man to manage manufacturing division for major plywood company. Position carries full responsibility for all phases of manufacturing, veneer procurement and new product development. Direct plywood production and management experience is essential.

**Send complete resume to
President, Harbor Plywood Corporation,
P. O. Box 940, Aberdeen, Washington.**

GENERAL MANAGER

for Plywood Manufacturing Company.
Write qualifications to:

Box 578, Crescent City, Calif.

Can you use this man? Age 40, 6 ft. 2"; Weight 230#. Has held the following positions: Manager Log Department—General Manager both Lumber and Plywood Plants. Resume on request.

**Write TL Box 366, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon**

Wanted to purchase, lease or buy interest in planing mill, flooring mill or medium sized furniture plant located in Southeast. Must have railroad siding and be equipped with modern fan type kiln or kilns.

**Write TL Box 392, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon**

GENERAL MANAGER AVAILABLE

Experienced in all phases of logging, lumber manufacture, sales, labor negotiations, etc. Resume on request.

**Write TL Box 391, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon.**

POSITION WANTED

Graduate Forester—over ten years experience West Coast. Log and Timber procurement, Timber sales analysis and management. Also experience with hard and soft wood veneers and lumber. References furnished. Age 39. Employed.

**Write TL Box 390, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon.**

DID YOU PASS BY

significant industry news

Pages 6-14-30 of this issue

*a newsletter of the forest products industry—
compiled every two weeks and printed alternately in*

THE LUMBERMAN & THE TIMBERMAN

FOR SALE—DRY KILN

Three Moore Double Track High Pressure Kilns, capacity 125M each with two boilers 100 HP and 150 HP.

**D. R. Middleton, Chico Moulding Co.
P. O. Box 714, Chico, California.**

PLANER FOR SALE

Newman 512, Planer Matcher, with 10 knife top and bottom heads, 3 pairs 8-knife sideheads, set of endless belts and Newman 55 feed table.

In excellent condition, may be seen in operation at Al Clements Lumber Company, Springfield, Oregon, until Aug. 1, 1959.

WIRE — PHONE — WRITE

Star Machinery Company
Portland — CA 8-7395
Seattle — MA 3-0760
Spokane — RI 7-6121

Sash Gang Saw, for cants. Prefer complete with filing room equipment, motor, starter, etc. Describe fully, price, location, etc.

**Write TL Box 393, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon**

FOR SALE

Mill site and planing mill. 30.61 acres on Highway 8 at Lame Deer, Montana—Also timber contract 7,500M ft. Ponderosa Pine.

**Write TL Box 385, c/o THE LUMBERMAN,
731 S. W. Oak Street, Portland 5, Oregon**

Republic of Panama Hardwood Timber, 122,000 acres, One Billion Feet, Principally Mahogany, Pacific side, forty miles Panama City; Large river through tract, next to Port for shipping, Native labor; Tax exemptions; Peel there, lay up here. $750,000. Favorable terms;

**Archie M. Matlock, P.O. Box 3307
Eugene, Oregon**

USED MACHINERY VALUES

1—11-saw 26' Air Lift Portland Iron Works Trimmer, automatic trigger type, 5-roller chain-driven 8" x 24" line-up rolls with 2 HP gear reducer. 5 HP vari-drive motor for table chains. 30 HP D.M.D. to line shaft. 2 sets saws.

42" Turner R.B. band resaw, 30 HP
42" Turner band H.D. shake saw, 15 HP
12" Mattison 5-head electric moulder
15" Stetson-Ross 6-12-A1 planer, D.P.
15" Stetson-Ross No. 6 planer, electric
15" Woods No. 404 planer, dbl. profile
20" Stetson-Ross 17A planer, electric
8' plywood panel cut-off saw
Diehl No. 750 glue joint rip saw, B.B., M.D.
Diehl No. 55 straight line rip saw, used
Diehl No. 33 straight line rip saw, used
30" Western gang rip saw
32" American B.B. motorized pony edger
Heavy steel husk with top saw, R.B.
Used Irvington Plan 1 printer & waxer unit
43" American 3-drum sander—bargain

TYEE MACHINERY COMPANY

1924 First Ave. South Seattle 4, Washington MUtual 2-5881 MUtual 2-5888

CLYDE P. CARROLL MACHINERY CO.,

122 S. W. First Ave., Portland 4, Ore.
Tel.: CApitol 2-1013

CALL • WIRE • WRITE

LIQUIDATION!!

Gang Sawmill

36"x24" Super-Mill Engineering gang saw
I. W. Johnson 8"x54" edger
Manganese log haul
Portland Iron Wks. selective trimmer
Worthington M75 air compressor, V-belt drive to 75 HP motor
Hanchett #724 round saw grinder
Armstrong #22 gang saw grinder
Armstrong filing clamp
Armstrong swage and shaper
Covel #109 stretcher roll
Portland Iron Works pond saw
70-ft. burner
Marion 2½-yd. shovel, 55-ft. boom, Esco #36 dragline bucket
1—Hyster RC150 lift truck
1—Hyster RC160 lift truck
All rolls, transfers, and conveyors with late style gearhead motors.

COMPRESSORS

Garage — Portable

1—U. S. Model H-34, ¾ HP sgle phase, 4-ft. 100 lb., with tank
1—Brunner Model A212—NEW With 2 HP 3 ph. motor, 10.4 ft. 175 lb. 22"x42" tank
1—U. S. with 1 HP single phase motor, 6-ft. 100-lb. 14"x48" tank

Stationary:

1—Allis-Chalmers rotary type, 247 CFM, 60 lbs., 870 RPM
1—Clayton cross compound 2-stage 465 CFM, 100-lb.; with unloader. Rebuilt
1—Ingersoll-Rand air cooled, 320-ft., 100 lbs., 75 HP 3 phase direct connected motor
1—Worthington 7x7x6x5, with 75 HP motor and 48"x12' receiver
1—Sullivan WJ3, belt driven by 100 HP Fairbanks-Morse 450 RPM ball brg. motor and starter; Gabriel receiver 42"x84". W.P. 129
1—Ingersoll-Rand 12x10, with 40 HP Motor and starter
2—Ingersoll-Rand type ER1, 14x12, 450 CFM displacement 100-lb., V-belt driven with 75 HP motors and starters

HOGS — CHIPPERS — BARKERS

3—Diamond #35/anti-friction bearing, rebuilt hog
2—Diamond #65/anti-friction bearing, 200 HP motor and starter
1—Hosmer slab barker
1—Sumner R.H. 66" chipper, direct connected to G. E. 250 HP synchronous motor with Link-Belt chipper screen

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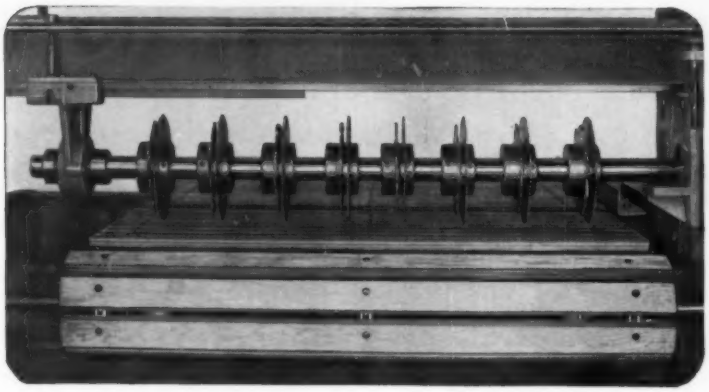
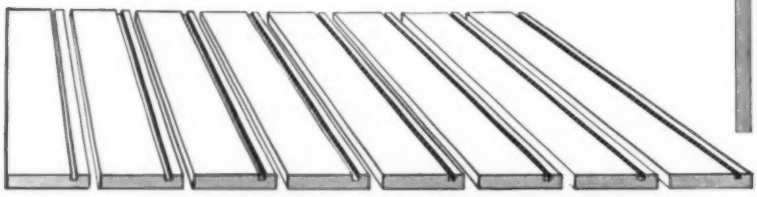
with the **MEREEN-JOHNSON NO. 435-H**

YOU GET ALL 4

MULTIPLE CUT-OFF...
MULTIPLE GROOVER...
MULTIPLE RIP SAW...
EQUALIZER



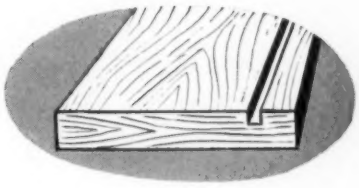
Arbor set-up for multiple drawer front work.

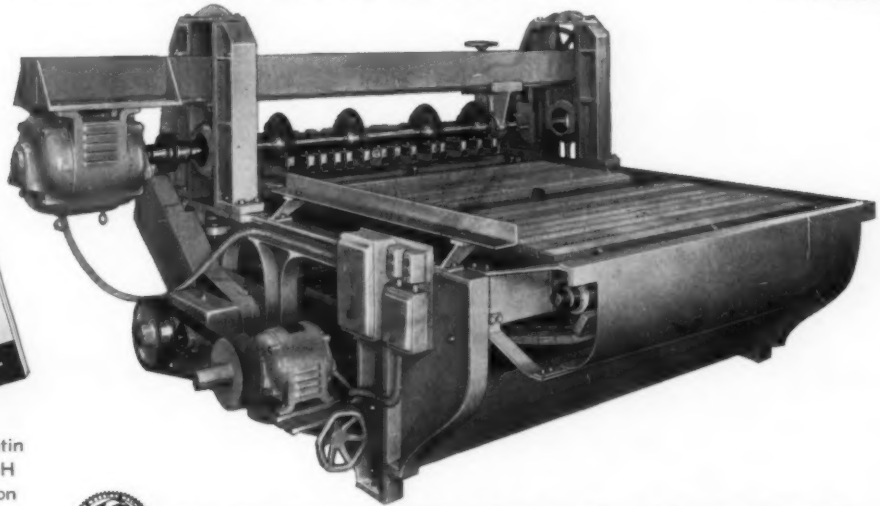


8 identical drawer fronts ripped and grooved in one pass.

THESE 4 are only a few of the uses for the versatile M-J No. 435-H Slat Bed Machine. Installations in furniture factories have proved that this machine will produce parts formerly manufactured on variety saws and by other hand operations. This machine is available in a wide variety of sizes and with practically any number of saws and groovers or saw and groover combinations. It's one of the most adaptable machines ever designed for use in a modern woodworking, plywood or furniture plant.

- **Trims ends of an entire case front, while notching or easing edges of drawer front ends.**
- **Sizes and squares plywood to ceiling and wall squares.**
- **Rips a complete panel into bed rails in one pass.**





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